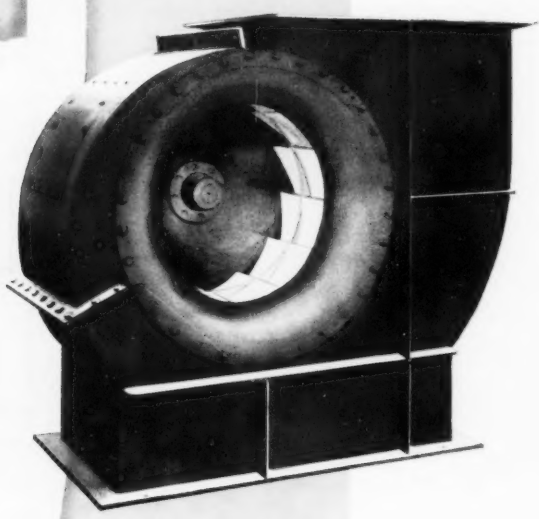
The
SHIPPING WORLD
AND SHIPBUILDING & MARINE ENGINEERING NEWS

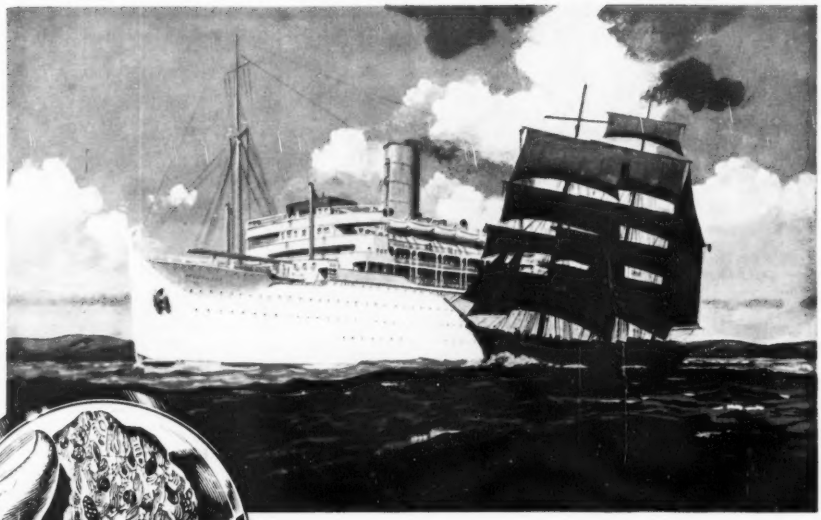
VOL. CXXIV No. 3014 WEDNESDAY, APRIL 4, 1951 Price 1/6



Typical modern steam-raising equipment includes Howden-Ljungstrom air pre-heaters Howden mechanical-draught systems and Howden-Vortex wet-type soot collectors.

The above illustration shows a Howden forced-draught fan.

HOWDEN



Sea-shell embedded in Oil-bearing limestone

From the sea — back to the sea. Millions of years ago marine organisms were deposited on sea-beds and buried under sedimentary rock. By some means science has yet to discover, they became converted into oil. The rocks where it lay emerged from the water and became dry land. In the oilfields of Persia to-day, several hundred feet above sea-level, you can in half an hour pick up a hatful of perfectly fossilised sea-shells such as might be found on any beach. You don't have to be a geologist to appreciate that these must once have been below water. The oil formed in the distant past now returns to the sea, to be consumed in ships' boilers and engines. The International Bunkering facilities of the Anglo-Iranian Oil Company Limited brings it to your service.

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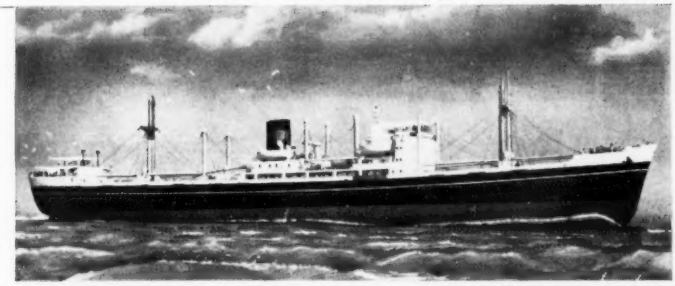
'ENGLISH ELECTRIC'
diesel auxiliaries

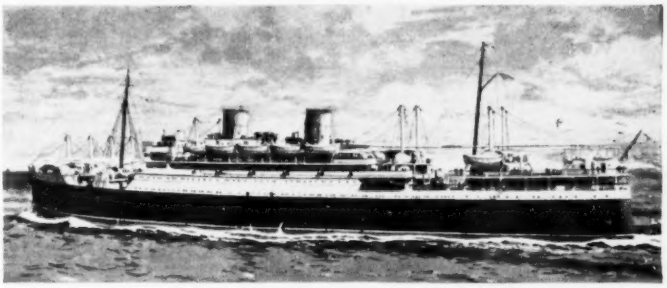
Recent Auxiliary Installations

Depending for auxiliary power on 'English Electric' diesel installations these three new ships are representative of the current trend. 'Rangitata's six 6K 330 h.p. 200 kW D.C. sets are the main source of the ship's electrical supplies. 'Penrith Castle' and 'Dunedin Star' each employ three 8K 400 h.p. 250 kW sets for lighting, cargo handling and other power requirements.

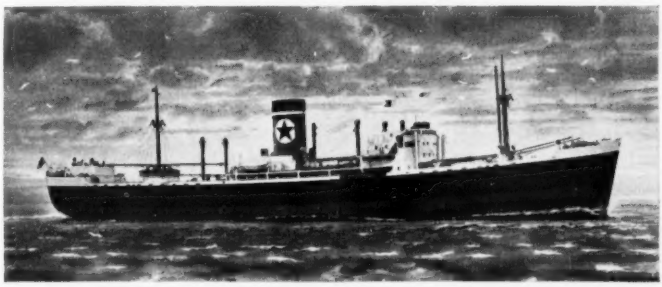
Other recent 'English Electric' marine installations include some of the most highly developed diesel-electric main propulsion sets ever constructed.



S.S. PENRITH CASTLE: Moller Line. *Builders:* The Blyth Dry Dock and Shipbuilding Co. Ltd.



M.V. RANGITATA: New Zealand Shipping Co. *Builders:* John Brown Ltd.



S.S. DUNEDIN STAR: Blue Star Line. *Builders:* Alex Stephen & Sons Ltd.

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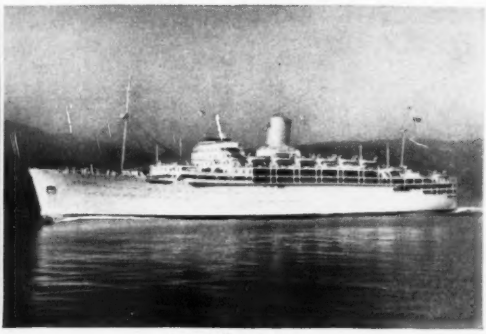
Marine Department, Rugby

WORKS: STAFFORD · PRESTON · RUGBY BRADFORD · LIVERPOOL

"ORCADES"—ORIENT LINE



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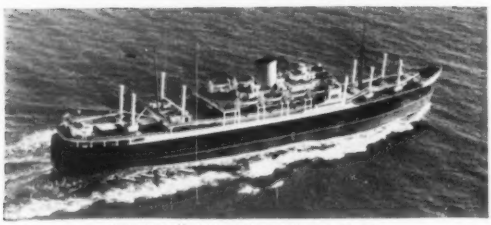
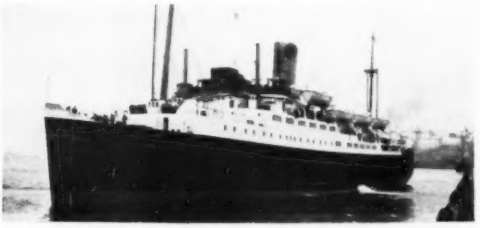


"RANGITOTO"—NEW ZEALAND SHIPPING CO. LTD.

"ACCRA"—ELDER DEMPSTER LINES LTD.

"NOVA SCOTIA"—JOHNSTON WARREN LINES LTD.



"HINEMOA"—UNION STEAM SHIP CO. OF NEW ZEALAND LTD.

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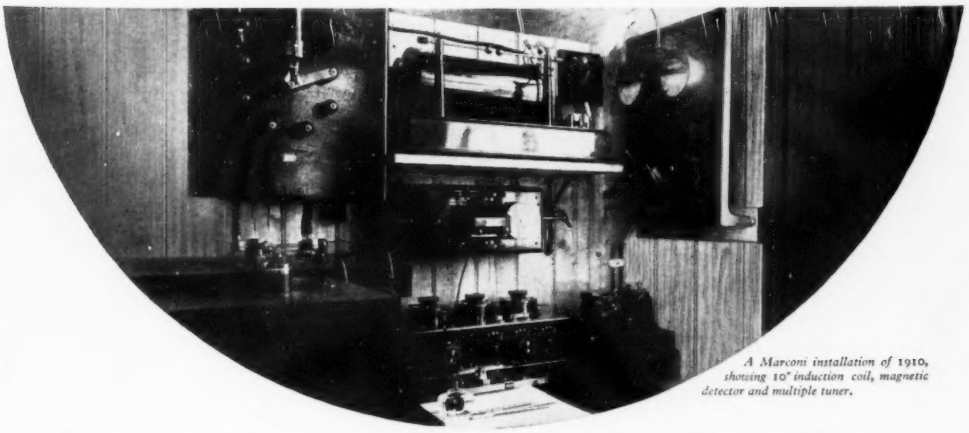
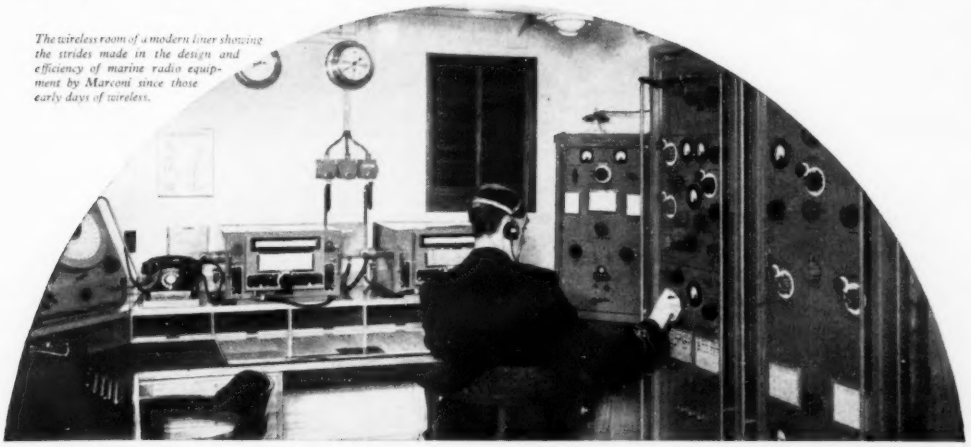


A Marconi installation of 1910, showing 10" induction coil, magnetic detector and multiple tuner.

PAST SERVICE PLOTS THE FUTURE COURSE



The wireless room of a modern liner showing the strides made in the design and efficiency of marine radio equipment by Marconi since those early days of wireless.

So intimately is wireless bound up with modern seafaring that it is difficult to imagine how the shipping industry fared without it. Yet it is only a little more than half a century since Marconi equipped the first British merchant ship with wireless and ended for ever the isolation of ships at sea.

From that day to this, the story of the Marconi Marine Company has been one of steady development. Communication, navigation and safety have progressively reached new standards. And Marconi's technical leadership, based on the unrivalled experience of the past, is the pledge that the course is set for even greater service in the future.

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Photos courtesy: ***Brooke Marine Ltd.***

25 foot aluminium alloy cruiser.

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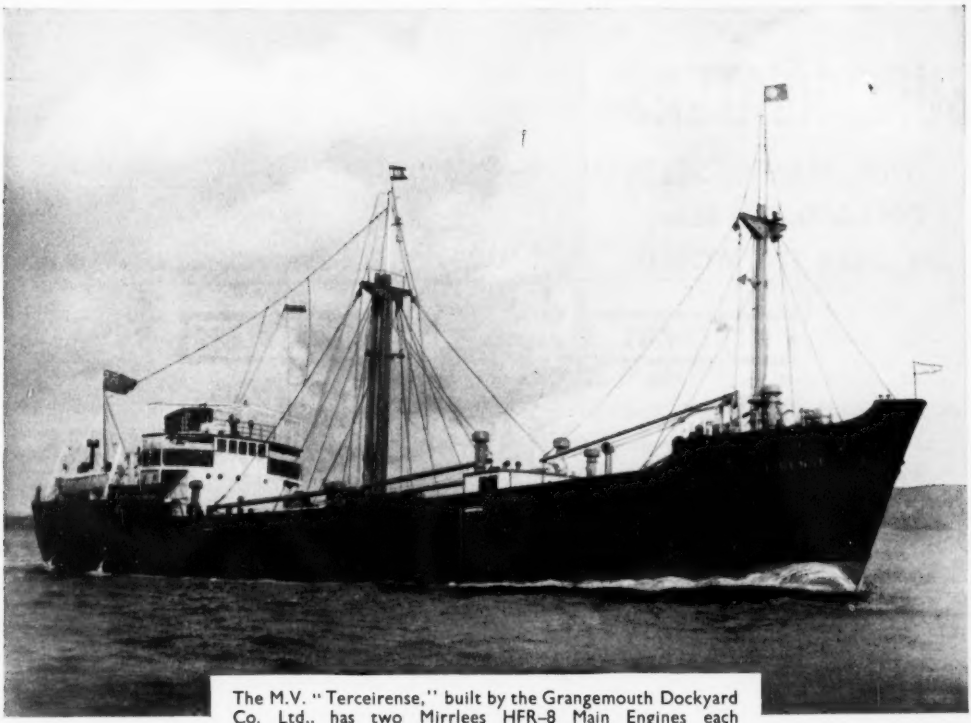

The M.V. "Terceirense," built by the Grangemouth Dockyard Co. Ltd., has two Mirrlees HFR–8 Main Engines each developing 720 S.H.P. at 300 R.P.M.

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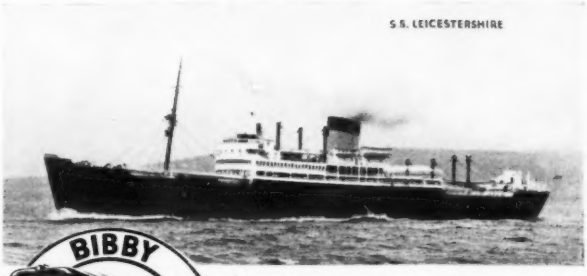

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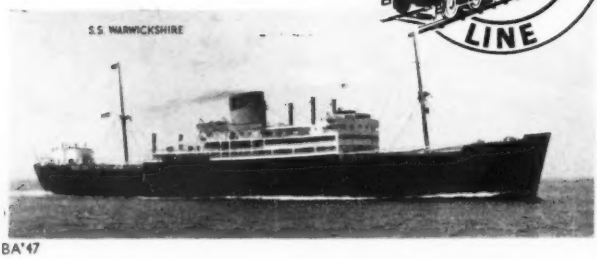
MERCHANT NAVY CLASS



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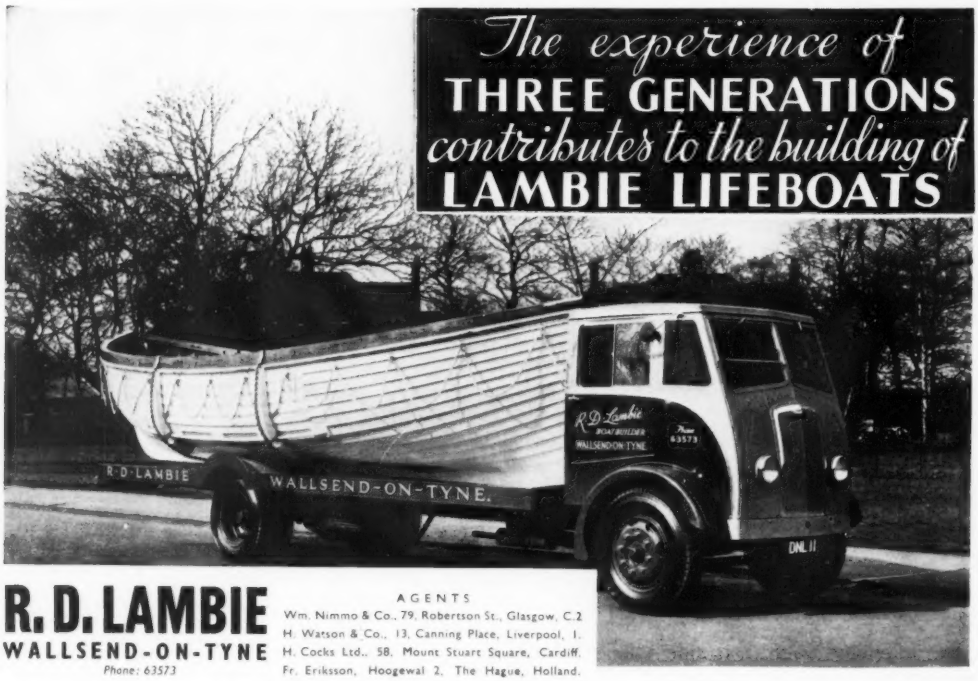

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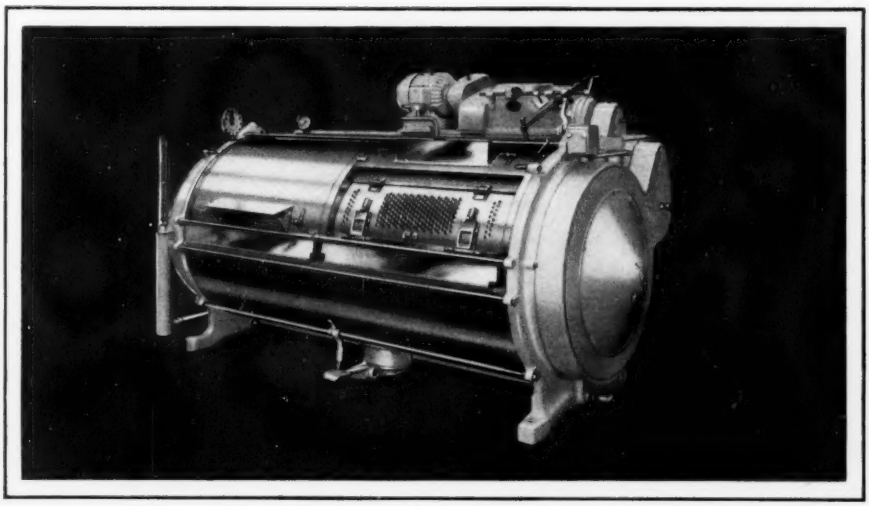

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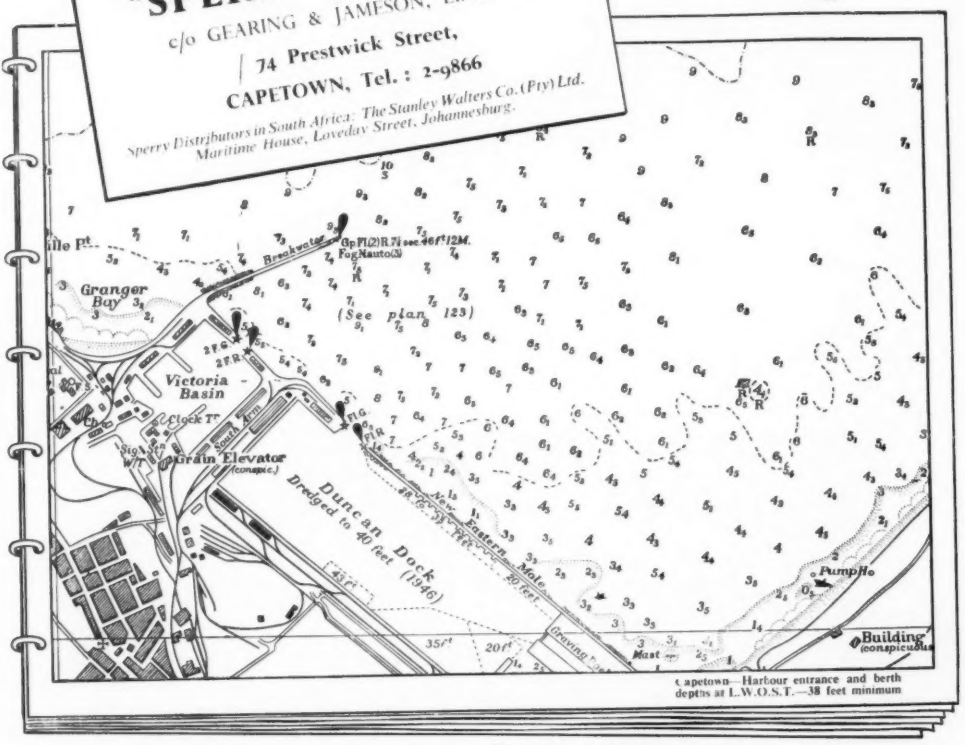

Capetown—Harbour entrance and berth depths at L.W.O.S.T.—38 feet minimum

Reproduced from British Admiralty Chart No. 1920 with the permission of the Controller, H.M. Stationery Office, and of the Hydrographer of the Navy.

Little more than a century ago the gazetteers had this to say of Capetown: "The only landing place is at the East end of the town where there is a wooden quay which runs some paces into the sea for the convenience of loading and unloading the scoots that come alongside."

Today, Table Mountain looks down on a fine modern harbour with safe anchorage in the roadstead for vessels of any draught, and well over 20,000 feet of completed quayage. There are excellent facilities for ship repairing and, as you would expect in a port of this size, a well-equipped branch of the Sperry Marine Servicing Department.

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The SHIPPING WORLD

AND SHIPBUILDING & MARINE ENGINEERING NEWS

The Oldest Weekly Journal devoted to Shipping, Shipbuilding, Marine Engineering, Shiprepairing, Insurance and Finance

FOUNDED 1883

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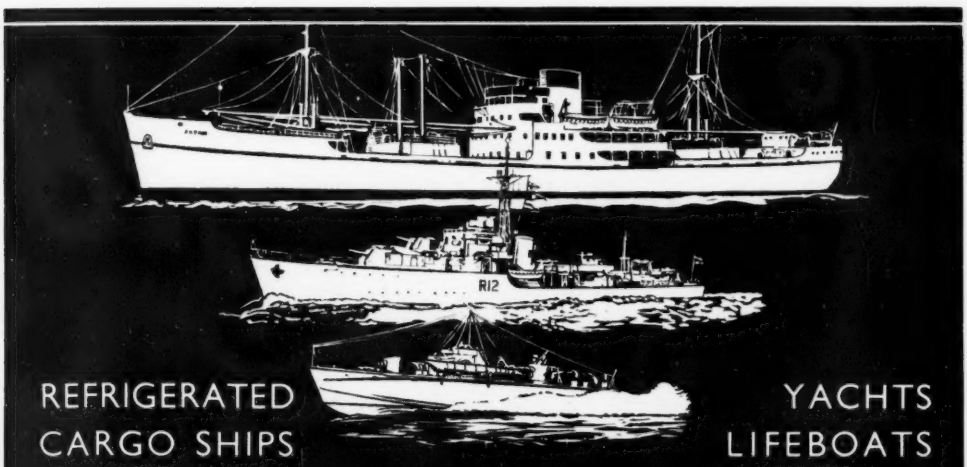

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COMPARISONS
of
VALUES of IMPORTS
into the United Kingdom

	AUGUST 1939 £	AUGUST 1949 £
Cotton Yarns and Manufactures	237,622	2,097,285
Woollen and Worsted Yarns & Manufactures	462,175	1,580,008
Silk and Artificial Silk Yarns & Manufactures	404,901	960,230
Manufactures of other Textile Materials	915,421	3,233,398
Apparel	614,585	384,927

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THE SHIPPING WORLD

SHIPOWNERS' "BIGGEST PROBLEM"

There was never a time when so much waste of carrying power by sea was occurring as in this year of grace 1951, and neither the Minister of Transport, the Minister of Labour, nor the Transport Commission, with 30 per cent of our ports under its control, are showing much concern in the matter. The warning of the lines which serve ports in Australia and New Zealand, which suggests that their sailings in the next few months may provide only about half the space that was available earlier this year, may bring them to a realisation of the grave situation. The British and Dominion Governments must act now, or worse may follow. The Chamber of Shipping and the Liverpool Steam Ship Owners' Association in their recent reports, as well as outstanding leaders of the shipping industry in their speeches, have called attention to this world-wide scandal. The most recent indictment has come from Mr. C. D. Storrs. He remarked that the slow turnround in ports was, perhaps, "the biggest problem" confronting the industry. It affects every section of the industry with the result that producers and consumers everywhere are suffering. Mr. Storrs quoted the experience of the fleet with which he is associated in the Australian trade. Ships waited in port last year for an average of 82 days, spent either completely idle or in a desultory fashion discharging or loading their cargoes, as compared with 60 days in 1949 and 56 in 1948, while in the prewar days the figure was 27 days. The financial loss each day, owing to the higher price of ships and bigger operating costs, is two or three times what it was twelve or thirteen years ago. "When one considers the enormous numbers of ships involved in this trade," Mr. Storrs added, "this wastage is dreadful and is equivalent, *in toto*, to something in the neighbourhood of 50 ships being completely withdrawn from profitable service for the whole of the year by reason of the delays in Australia alone." Conditions in New Zealand have been as bad as in Australia, and it has been suggested that they have recently been worse, culminating in a complete hold-up of all traffic.

There is not a port in the world in which shipping is being handled as quickly and as efficiently as it was before the Second World War. British ports are under this condemnation. Everything has gone wrong since politicians began to interfere, with their talk of the Welfare State, their reprobation of competition and profits, their glorification of bulk-buying and their experiments in the nationalisation of industry. The incentives to economic work at the waterside have been removed, with disastrous results. The old regime, when the employer was responsible for labour conditions, was perhaps not perfect, but the present divided authority has undermined discipline, raised costs and delayed loading and unloading. Little is heard of the waste of tonnage in Parliament or in the newspapers, as though it did not affect anyone except shipowners and dock workers. We are, in fact, confronted by a world wide conspiracy to hold up trade. It is inspired, and in large measure directed, by Communists, who, as Mr. Tom Yates, the General Secretary of the National Union of Seamen, has had the courage to reveal, are at work on board British ships, trying to stir up trouble. This campaign is costing a great deal of money. The Communist missionaries have to be paid and so have the printing bills. Who are the paymasters and organisers? That is a question which has never been answered officially, though it should not be difficult to answer it.

What is to be the next step to bring to an end a state of affairs which is crippling trade and industry in this and in practically every maritime country? The Communists are winning. Of that there can be no doubt. The time has surely come when all who are concerned in this disorganisation of sea transport must get together and see what can be done. The facts are not in dispute, the effects of the hold up of shipping are apparent to shippers and shipowners, and there is no doubt as to the source of the troubles and the objective. It is the most insidious movement to interfere with the smooth flow of the world's trade that has ever been organised, and we, as the leading maritime nation in the world, should set an example by acting firmly and remorselessly. This waste of shipping is contributing to the inflationary movement, since the consequent losses inevitably add to the cost of living and the chase of wages after prices.

Current Events

A Case for Action

The latest issue of Lloyd's Register has supplied not only shipowners, but all whose livelihood depends on ship design, building, equipment and operation, with plenty of material to prove that all is not well with British shipping. The figures are authoritative: they are accepted all over the world as accurate. What is the moral to be drawn from them? It has often been stated—and it is a matter of pride—that the losses sustained during the late war have been made good. There is no contesting the statement that the total tonnage under the British flag has practically reached the pre-war level. But when the figures are examined it is found that not only has the composition of the fleets changed as between liners, cargo vessels of various types and oil tankers, but that the number of old or inefficient ships is now a menacing factor. Lloyd's Register sets out the age categories. It shows that of about 18,000,000 tons gross now afloat, 2,935,188 tons gross, consisting of 2,199 ships, were built 25 years or

more ago, and that in the next category, that of 20-25 years, there are 591 ships of 1,716,000 tons gross. What it comes to is that nearly 4,700,000 tons gross are no longer efficient by reason of age on the generally accepted assumption that 20 years is, in most cases, the limit. These ships should be replaced. The sum to be spent would be two or three times as much as their original cost. But of the money—undistributed profits—which should be devoted to this task, the tax collector takes about half, which should be earmarked for building. In this way the shipowner is handicapped. But that is not the whole story, for of the tonnage in the category 5-10 years, comprising 1,319 ships of about 6,500,000 tons, are the vessels which were built under war conditions either in this country, the United States or Canada. In design, construction and equipment they represent prewar standards. In all three respects, remarkable progress has been made. The greatest anomaly is that owing to Government action, the shipyards are allowed to provide foreign owners with the most modern ships, but the hands of British owners are tied by the remaining regulations affecting the sale of older tonnage for service under foreign flags. In effect, the Minister of Transport has declared that owners in foreign countries or the Dominions may gain all the advantages from the highly efficient tonnage which can now be turned out, but British owners must get on with their old tonnage since in many cases permission to sell is still refused, and if permission to sell and build is given, the Chancellor of the Exchequer makes a claim to about half the money which should be at the owner's disposal for paying for new ships.

An Imminent Peril

THE RESULT is that shipyards are full of work on tankers, owing to the world expansion of the demand for oil, but the number of liners and tramps which are being built for service under the British flag is quite inadequate to maintain our efficiency as carriers of passengers and dry cargoes. The task of replacement is being rendered practically impossible by these two obstacles—the penalising taxation of undistributed profits, and the official unwillingness to permit owners to pursue, without let or hindrance, their traditional policy of selling their older ships and placing contracts for new ones. The overseas owner has, in fact, the run of our yards for new ships and he is, of course, very welcome, but his British rival is told to make the best use he can of many of his old and less efficient ships which he wishes to sell. If this restrictive policy is persisted in, British shipping must be at a serious disadvantage in what is inevitably an internationally competitive industry. The invisible exports estimated at upwards of £150,000,000 a year, which are now so important a factor in our national economy, will shrink. This peril is developing at a time when our trading account is getting more and more out of balance owing to the falling off of exports of manufactures and coal—nationalised coal—and the increased cost of our imports of food and raw materials which the planners and bulk buyers have discovered as being beyond their control. This country is running into an economic storm, the worst in its history. Labour costs are already high and the cost of imported raw materials, most of them in short supply, is increasing. The invisible exports of the shipping industry have cheered many a Chancellor of the Exchequer in the past. He will be very doleful if those exports decline and in a few years time there is widespread unemployment in the shipbuilding districts, for the most part represented in the House of Commons by Government supporters.

A Finance Company for British Shipbuilding

IN BYGONE days, particularly in the early period of development of the steam tramp, it was the practice for business people in various shipping centres to finance the building of a new ship, taking out 64th shares for the purpose, or for individual owners and builders to make their private arrangements, sometimes without even a written contract. In the postwar world this happy arrangement has proved insufficient, and ship finance must have placed a large strain upon the resources of shipbuilders. The chief resource for financing shipowners' new ventures has been the shipbuilders themselves, and many shipping companies now well known and prosperous owe their foundation to such facilities. With the advance in costs of materials and higher wage levels, not to speak of the crippling rate of taxation on all industries, including shipbuilding, the shipbuilding finance market has become limited and difficult and shipowners with their own large reserves have been in a fortunate position. Several other shipbuilding countries have for long had special finance organisations for assisting owners to increase or modernise their fleets, but no similar institution existed in Great Britain. That omission has now been remedied with the formation of the Ship Mortgage Finance Co., Ltd., whose primary objective is that of making medium term loans on first mortgages of ships constructed in the United Kingdom, the money for this purpose being raised by the issue of medium term debentures or other securities. It may be anticipated that the demand for the facilities which the company will offer will be a permanent one, and as funds will be available to finance shipbuilding for both British and foreign owners, the formation of the company may be regarded as a most important step in preparation for the future. Obviously with a specialist company of this kind risks will be averaged over a number of propositions, while the names of the directors, Sir Amos Ayre, Sir Philip d'Ambrumenil, Mr. J. Ramsay Gebbie, Sir James Milne and Lord Piercy, provide an assurance that all the technical skill and experience required will be amply available.

The Cost of Waste

How amazed shipowners of the Victorian era would be if they could listen to some of the tales of the results of bulk buying and nationalisation and the other current follies on British shipping. If to these experiences were added the record of delays in ports in this country and elsewhere, they would conclude that the world was indeed mad. There was certainly never a time when carrying power was wasted so grievously. Every shipping office has its own pet anecdotes of the disorganisation and loss of money which political ideology has inflicted on an industry which was once famous as the most economically conducted of all our industries and, consequently, one of the most efficient. Mr. J. A. Billmeir, the chairman of the Stanhope Steamship Co., Ltd., has recently quoted some instances which read like extracts from a companion volume to "Alice in Wonderland." Vessels discharge coal from America in South Wales and then load coal again at the same port for Central America. Other vessels are taken on time charter with delivery in Germany, Australia, and South America to ballast to Vancouver to load timber for this country, while other vessels are attracted to Germany to load timber for other oversea destinations. Then other vessels load German coal for Pakistan and return from India to this country with another cargo of coal. "Recently one of our own ships loaded a cargo of wheat in the Argentine for India, and when this cargo was discharged she proceeds to Karachi to load another cargo of wheat for the Continent." This sort of thing is going on from week to week without check while Ministers are trying to find expedients to check the rise in the cost of living. All this waste of tonnage means waste of money and contributes in some measure to the high prices which are causing so much trouble. Is it surprising that there is a shortage of tonnage? Since the law of supply and demand in this international industry has not been suspended, producers and consumers have to pay the bill.

Communism at Sea

IN THE current issue of *The Seaman*, Mr. Tom Yates, General Secretary of the National Union of Seamen, discusses again the danger of Communist propaganda among the crews of British ships. He has already described how a seamen's union on the other side of the

Atlantic was destroyed by Communist efforts to obtain control of it. "Documents," he adds, "have come into our hands which reveal similar disruptive influences at work in our own industry." Copies of it have been found in all ships touching Mediterranean ports, and in particular Marseilles and Genoa. It sets out eight "primary and simple methods of creating unrest and training merchant ship crews for subversive action in their ships." The organisers of this utterly unscrupulous and dangerous campaign, Mr. Yates points out, are careful to instruct the agents who are to carry it out to keep in the background. "They are instructed to incite shipmates to make complaints, but not to allow themselves to be chosen as spokesmen of the complaints and not themselves to make any direct complaints to those in authority. They are to pull the strings, and their puppets will move." This is the familiar tactic of these agitators ashore as well as afloat. The document states that merchant ships generally have in their steward departments young men who are "either ignorant or they lack common intelligence"; but such men can be made use of. They should be made to feel that because of their youth stewards and others are forcing them to do needless work, and exercise excessive authority over them. Disturbed relations can be easily produced as a rule (the document says) merely by using these methods. Mr. Yates makes the very disturbing charge that the document urges stewards who serve the ships' officers to repeat any conversation they hear among officers and to exaggerate by suggestion any such statements overheard. Another suggestion is that "the usual ships' drunkards" can easily be handled to create unpleasantness and mutual friction in the ships. It is added that a devilish expedient proposed for the *agents provocateur* in charge of this campaign is that such men should be taken to local meeting places and left to imbibe "plenty of whisky" which will be available at reasonable prices; but the agents themselves are instructed not to associate themselves openly with drunken shipmates in the ship. No wonder the N.U.S. is determined to expose such a carefully organised campaign, for its success would not only ruin the Union but, more important, gravely injure this country's ability to maintain efficient fleets. Mr. Yates regards it as "one of the most subtle forms of sabotage to which the Communists have got down in their studied and calculated service to Soviet Russia." As he remarks, it is a phase of the organised campaign of sabotage set on foot at the instigation of the Cominform to prevent the attainment of the defence programme of our own Government and other Governments in the West in resistance to Soviet Russia's aggression.

Golden Jubilee of a Pioneer Ship

The year 1951 will probably be known, for better or worse, as the Festival Year. At the moment, it is extremely difficult to gain, from viewing many aspects of our national life, the festive and expansionist spirit which was present and therefore justified the 1851 Exhibition. The die is cast, however, and we must await events before this year's Festival can be appraised. It may be that the fact that there was going to be a Festival in Britain in 1951 was partly responsible for the decision to hold the international conference of naval architects and marine engineers in this country, an event always looked forward to with some anticipation. The conference will be opened by the Lord Mayor of London on June 26, delegates being taken to Glasgow on July 1 and to Newcastle-on-Tyne on July 4, before returning to London. The conference is being organised by the Institution of Naval Architects and the Institute of Marine Engineers, in association with the Institution of Engineers & Shipbuilders in Scotland and the North East Coast Institution of Engineers & Shipbuilders. An interesting item of news recently announced is that the *King Edward*, the first passenger turbine steamship, will be on view to delegates to the conference, and they will be taken down the Clyde in this historic but still useful vessel. It will be 50 years on May 16 next since the *King Edward* was launched, and she is still fulfilling the purpose for which she was designed, and with the original boilers and steam turbines substantially unchanged. When completed, the vessel attained a speed of 20 knots. Since then she has become a familiar sight to two generations of Clydesiders and saw service in both World Wars, subsequently becoming part of the British Railways' fleet. Whatever strange devices may have been concocted to portray the British character, and progress in science and industry in this country, it will be difficult for any Festival exhibit to take pride of place over the *King Edward*.

A Bonus Issue

The City has welcomed the decision of the directors of John Brown & Co., Ltd., to bring issued capital into better alignment with real capital by a capitalisation of £2,154,000 of the company's substantial reserves. These have been reinforced by the surplus over book figures of the compensation allotted the company for iron and steel assets that were appropriated by the State in February last; part of that surplus is being capitalised. Doubtless a useful balance will be left remaining in the surplus, and the group has yet to receive compensation for the colliery interests it handed over to the National Coal Board in 1947. When all these payments due to the company are made, a cash distribution from the proceeds is a possibility. Meanwhile it is highly satisfactory that the nominal value of the company's 10s. ordinary units is to be restored to the £1 denomination of the pre-1930 capital reduction scheme. The 100 per cent share bonus that the proposed capitalisation brings is, of course, no more than a book-keeping transaction designed to correct balance sheet distortions that have come from the steady heaping up of reserves during a long period of financial conservation. It will add nothing to group owning capacity. The City hopes, however, for some increase of dividend payment. In this connection it may be pointed out that the 12½ per cent tax free dividend paid for 1949/50 was rather more than five times covered. Profits should have been more than maintained this year, so that a stepping up of the dividend would involve no departure from sound financial principles.

Fire-Resisting Bulkheads

One of the most marked trends in the design and construction of passenger ships during the past twenty years has been the increase in attention given to the prevention of and protection against fire. The requirements formulated by the International Conference on Safety of Life at Sea in London in 1948 were that the main structure should be divided into vertical zones by Class A bulkheads, while in addition one of three alternative measures should be adopted. These were the construction of internal division bulkheads according to classification B but without a detection or sprinkler system, the fitting of an automatic sprinkler and detection system without restriction as to type of bulkhead, and a system of subdivision using A and B divisions with a detection system but without sprinklers. The important part which A and B divisions will play in passenger ship construction has justified considerable research and development work by firms supplying materials to shipbuilders, and some interesting results of one product, "Durasteel," have recently been received. A prototype bulkhead assembly was produced by Durasteel, Ltd., to the design of John Brown & Co., Ltd., who have since incorporated composite steel and asbestos panelling of this type as the cladding of principal bulkheads bounding the public rooms in the New Zealand Shipping Company's new liner *Ruahine*. A section of a bulkhead of this type has recently been tested against a high pressure gas furnace in the Joint Fire Research Station at Boreham Wood. The furnace temperature rose to 827 deg. F. during the 60 minute test, the average temperature on

the exposed face of the bulkhead at the end of the test then becoming 116 deg. C., which represented a temperature rise of 95 deg. C. The maximum temperature measured at any one point was 144 deg. C., giving a rise of 123 deg. C. These temperature rises compare with the maximum permitted temperature rise of 139 deg. C. under the Conference requirements for Class A divisions.

Crankcase Explosions

The present iaquiry into a crankcase explosion on a steamship has again aroused the interest of the shipping industry in this problem, and there appears to be some surprise that such explosions are not solely confined to motor vessels. The paper read by C. C. Pounder last year before the Institute of Marine Engineers on diesel engine safety precautions throws considerable light on this subject, to which a great deal more has been added in the resultant discussion. Attention was directed for the most part to the causes and cures with diesel engines, but the fact emerged that there have been a number of similar explosions not only in steam ships but even in the gear boxes of workshop machinery. It may be recalled that in the course of the discussion, it was revealed that one explosion in the crankcase of an enclosed steam engine which had been overhauled was due to the crosshead guide being overtightened so that the crosshead seized, an event which is almost identical in cause and effect to that described in Thomson's book "Practice of Lubrication." In marine diesel engines such explosions, although by no means common, are apparently more frequent in diesel engines of the trunk piston-type than in engines of the crosshead-type. A number of solutions have been put forward to forestall, or at least minimise, the effects of such explosions. These range from the full-scale ventilation of the crankcase to the fitting of explosion doors. There is, unfortunately, a tendency to rely too much on instruments to give warning of unsuitable conditions within the crankcase, but in general, opinion seems to have it that the safest precaution is to ensure an excess of air in the crankcase. The so-called explosions in crankcases are actually caused by burning rather than detonation. To support combustion there must be three essentials—combustible vapour, sufficient air to support combustion and sufficient heat to fire the charge. If there is too much air, it is difficult to see how there can be any explosion. The findings of the court of inquiry into this matter will be of more than usual interest, following so closely upon the opinions expressed in Mr. Pounder's paper and in the subsequent discussion.

Need for an Inquiry

A searching inquiry should be made into the administration of the State monopolies which run the country's air lines. It would be asserted by accredited witnesses at such an investigation that "cut prices" are being quoted in an apparent attempt to drive out of the air the economically run charter companies which form a valuable reserve in time of peace, as the Berlin air lift and the Irish milk run illustrated, and would prove of inestimable value in time of war. Group Captain W. N. Cumming, president of the British Air Charter Association, has declared that his members know that some of the operations of the corporations cannot have earned any profit. "The figure of £260,000 given as the surplus from the corporations' charters is less than the amount for equivalent scheduled operations." The difference between the two must, in his opinion, be regarded as part of the airways' deficits. And he adds that "private companies' charters which have come from Government departments would not have been accepted by British Overseas Airways at the prices offered." The official spokesman denies that there has been any such spoon feeding. Since the taxpayers' money to the tune of millions is involved, the corporations and the charter companies, as well as the organisation representing the shipping industry which is so much concerned in the matter, should have an opportunity of testifying before an impartial tribunal.

War Losses and Insured Values

In the annual report of the Liverpool Steam Ship Owners' Association, a long paragraph is devoted to the question of the replacement of war losses in relation to insured values. It is pointed out that the losses of ships by war risks in the last war were paid for by the State in terms of compensation designed to re-imburse to their owners sums representing the fair value of the ships at the dates of their loss. In general, according to the report, the values fixed under the War Risk Insurance Scheme did fairly represent such value, but the scheme made no provision at all for a rise in value taking place between the date of loss and the date of ultimate replacement. In the case of the majority of losses, the rise in building costs over the period from the outbreak of war to date of loss was less, and in many cases very considerably less, than the rise over the period from the date of loss to the date of replacement. In the result, war risk monies fell substantially short of those required to replace these losses. The balance had to be found by owners out of their own resources. Having made this point, the report goes on to deal with the adverse effect of taxation in relation to war losses. This is a matter for shipowners, but in so far as the inadequacy of the Government's war risk insurance scheme is concerned, it may be pointed out that while shipowners were fully aware that the amounts for which they were allowed to insure their vessels would ultimately prove insufficient for replacement purposes, they were prohibited from effecting supplementary insurances in the open market, had they wished to do so.

The Only Limit

Marine underwriters are always ready to transact hull business on the basis of an agreed insured value. The only limit they place on the amounts insured on hulls is with regard to "Total Loss Only" insurances, and this limit is aimed more at ensuring an adequate insured value in the full sea risk policy than at restricting the amount for which the shipowner is covered. Just why the Government limited the amounts insurable against war losses is not clear, for while initially it may have been feared that losses would be so heavy that the scheme would prove costly, it soon became apparent that this was not the case and eventually, by re-insuring the mutual war risk "Clubs" for all but a very small proportion of their risk, the Government not only made a handsome profit, but, by "jobbing backwards" in a manner which would never be tolerated in the open market, deprived the "Clubs" of much of the profit they had made, on paper, up to the time at which the increased re-insurance was made retrospective. The situation described in the report of the Liverpool Steam Ship Owners' Association is strong evidence of the advantage of private enterprise in marine insurance over Government participation.

SAYINGS OF THE WEEK

PROSPECTS OF THE HULL MARKET

"Already many owners of different types of tonnage are seeking to obtain increases in values, and it therefore follows that the cost of repairs for the next year or so must rise, following the rise in the cost of materials and wages."—*The Hon. R. M. Preston, D.S.O.*, chairman, The Marine Insurance Co., Ltd.

THE COST OF NEW TONNAGE

"It must be emphasised that shipbuilders are doing all in their power to keep costs as low as possible, and the inflationary tendency is no greater in shipbuilding than in any other industry. Every increase in steel, coal, timber, etc., must of necessity be reflected in shipbuilding costs."—*Mr. Horace Willson*, manager and director, William Hamilton & Co., Ltd.

ON THE "BALTIC"

DELAYS IN UNITED KINGDOM PORTS

By BALTRADER

The supply of tonnage to bring ore and phosphate to Great Britain from the Mediterranean is not plentiful. Recent fixtures at 56s. and 57s. for iron ore from Bona to the U.K. show an increase in rate of about 12s. per ton. The timber carrying season is approaching, and the Mediterranean will have to compete with the Baltic and White Sea for shipping to implement the several urgent programmes. Unless special measures can be taken to meet the exceptional pressure of arrivals in this country there will be much waste of tonnage as a result of delays at some of our ports. Already there has been serious loss of time in discharge occasioned by shortage of railway trucks and craft. These items of equipment cannot be conjured out of thin air, so that one cannot expect a great increase in their number in the following months. The most practicable way to meet the difficulty is an all-out campaign to ensure proper use of the trucks and craft which we possess. British Railways have a responsibility to forward trucks to their destinations in less time than is occupied at present and to compel receivers to discharge the trucks as soon as they arrive.

Shipping Capacity Wasted

In the same way, it is probable that our existing craft would be sufficient to meet most demands if their manning and handling were more effectively organised. A 9,500-tonner arrived in the Thames on February 20 and waited for 18 days to discharge sugar from Queensland. At the end of this time she secured a berth at Greenwich Buoys and completed discharge on March 24. This vessel was one of a large number similarly held up through congestion in the port; the situation has not since improved. A steamer loaded about 6,500 tons of phosphate at Bona in one day, which was highly satisfactory. But alas, the owners' pleasure was turned to chagrin as a result of the deplorable despatch in discharging at Hull. The vessel arrived on March 11 and ought to have been able to clear for the Tyne and load there before the Easter holidays. Instead there was still 60 tons to discharge on March 24, the Saturday before Bank Holiday, but a blizzard prevented work and discharge was completed on the following Tuesday, March 27. Very little of the cargo was discharged into craft; it nearly all had to be delivered into wagons, and of these there was an almost continuous shortage. The loss of the last few days was, of course, bad luck, but the slow work which caused the ship to bump into the holidays was characteristic of present conditions at U.K. ports. Delays at British ports account for part of the shortage of tonnage which is making it difficult to carry out our programmes of import and export.

Lower Freights from the Plate

The less buoyant condition of freights for vessels to load in the Argentine has been demonstrated by the fixture of a ship to load heavy grain in April from up and down River Plate to West Coast India at 162s. 6d. per ton, a decline of 12s. 6d. from the last rate paid. For a long time the Plate market has been delicately poised, by reason of the small number of available cargoes and a similarly restricted supply of tonnage committed to load in South America. A small increase in demand from the Plate obliges charterers to compete with alternative employment, mainly the carriage of ore from Brazil to supply the voracious steel works of the United States. Owners, knowing that there are few vessels at charterers' disposal, hold for a rise and are successful. The turn of the charterers comes when they are so little interested that they can afford to risk the disappearance of even the handful of tonnage in their market.

In view of the uncertain prospects of the Plate market, it is not surprising that outward rates have hardened lately. The maize crop, however, appears to be coming on quite well and according to J. E. Turner & Co.'s report, there may be 1½ to 2 million tons for export. Movement may be active from July onwards if sales of maize are satisfactory; but the intentions of the leading European buyers in Holland, Belgium and Germany are not yet known. As for this country, who can tell what imports will result from the interminable conversations in London and Buenos Aires?

The Freight Markets

There has been fairly active chartering for coal from the United States to Europe in the past week, particularly for consecutive voyages; but there is decidedly less inquiry for urgent and early loading; in fact, prompt stems for unfixed vessels are not easily obtainable at Hampton Roads. Fixtures from there include: *N. O. Rogenaes*, 9,200 tons, to Antwerp or Rotterdam, $14, option Hamburg $14.50, prompt; *Britta* to Rotterdam, $10.30, three voyages beginning June; a 9,000-tons steamer monthly to Antwerp-Hamburg range at graduated rates averaging $10.60 basis, Antwerp discharge, May to December; a 9,000-tonner to Rio at $16.90, April/May. The Cuban sugar season is in full swing; fixtures to U.K. have been arranged at 160s., April/May, and 145s. June/July. The *Flying Cloud*, 8,000 tons, is fixed from Cuba to Karachi at $32 sugar, April/May. Little grain chartering from North America has been arranged but Gulf to Eire has paid $19, May/June; North Pacific to East Coast India, 172s. 6d., April/May; St. Lawrence to West Italy, $14.50, option Venice $16, July; and St. Lawrence to Beira, 180s., May/June. All of these are for heavy grain, the cargo for Beira being maize. Business in the Australian market includes: *Greenwich*, West Australia to Genoa, Naples or Leghorn, 157s. 6d., bulk ex silo, option Malta, 170s., August/September, and *Blairclova*, full range Australia to Egypt, 155s., bulk ex silo May/June. Manchurian soya beans and grain seem to be available on a very large scale and numerous fixtures continue to be arranged. *Archimede*, 10,000 tons, is fixed from Dairen or Chinwangtao to Stettin at 230s. f.i.o. 1/30 May. The *Tarsian* (Fort type), 10,384 d.w., 10/10½ knots on 24/25 tons oil, is fixed for a trip out to Malaya at 45s., delivery April. *Lord Gladstone*, 10,290 d.w., 10 knots on 26 tons oil, has been chartered for a River Plate round voyage via Sweden at 44s. 6d., delivery London early April.

Air Charter Business

Air charter inquiry has been on a satisfactory scale and flights to the Near and Far East have been a feature of the market. Orders for conveyance of ships' crews are reported to have been rather less numerous during the past week, but demand is broadening for planes to deal with the summer passenger traffic to and from all parts of Western Europe.

The current number of *The Ships' Bulletin*, organ of the Esso Shipping Company, contains an illustrated description of a voyage from New York to Albany, 124 miles from the sea, in the 16,750 tons tanker *Esso Norfolk*.

The latest issue of *The Shipbroker*, journal of the Institute of Chartered Shipbrokers, contains articles by W. Stanley Metcalfe on charter parties and bills of lading, by C. L. Rose on Marine Insurance, and by S. J. Duly on the ventilation of ship's holds.

The Ship Mortgage Finance Co.

New Facilities for Owners Building in the U.K.

The Ship Mortgage Finance Co., Ltd., has been incorporated as a private company and will have an authorised share capital of £1,000,000 divided into 1,000,000 ordinary shares of £1 each. The capital will be subscribed privately by various leading insurance companies and other city interests, including £250,000 by the Shipbuilding Conference. The board of the new company will include Sir Amos Ayre, Sir Philip d'Ambrumenil, Mr. J. Ramsay Gebbie, Sir James Milne and Lord Piercy. It is considered that this board will provide adequately the experience required for the conduct of the company's proposed business. A manager has been engaged, Mr. C. A. Lensen, a member of the Baltic, who is experienced in the ship and freight markets. The secretary is Mr. P. G. Wreford, A.C.I.S. The company's office will be at 7 Drapers Gardens, E.C.2.

Medium Term Loans

The company has been formed with the object of making medium-term loans on first mortgages of ships constructed in the United Kingdom and to raise money for this purpose by the issue of medium-term debentures or other securities. While loans to British shipowners are primarily in view, the objects of the company are drawn sufficiently widely to permit of loans being made to foreign shipowners in respect of new ships constructed in United Kingdom yards when exchange control and other conditions are such as to permit of this. Other important points are that the company's loans will be made only upon completion of the ship—loans during construction are not in contemplation; they will be limited as a rule to fifty per cent of the cost or value of the ship, and it is hoped the term of the loan will normally be five or six years. Experience will show how nearly these conditions fit the requirements of the business.

The company's powers provide that it may issue debentures or debenture stock to an aggregate amount of monies borrowed and outstanding at any one time not exceeding ten times the nominal amount of the issued share capital and the reserve funds of the company. The debentures or debenture stock would be secured by a floating charge on the whole of the company's undertaking and property and assets for the time being, and power will be reserved to the company, under the Trust Deed constituting the initial debentures and debenture stock, to issue further debentures or debenture stock ranking *pari passu* in point of security. It is anticipated that in due course arrangements can be made to market these debentures, which insurance companies and other institutions may find a convenient security.

Risks Averaged

It is thought that finance provided through the company by the issue of debentures will present advantages over loans on particular ships, partly because (by the intervention of the company's capital) the backing for the individual loan is increased and the risks are averaged over a number of propositions: this, of course, is an important point; but, above all, because the problems for a lender which arise out of the fact that lending on ships is a highly technical business are met by the fact that these fall upon a company which is specially organised for dealing with the business and will have a management with the necessary experience. There is no doubt as to the permanent demand for the facilities which the company will offer, whether by British or, when conditions permit, by foreign shipowners. Replacement of dry cargo ships is now developing—especially in ships of moderate size. Applications for financing such building are expected to be promoted by the company's formation.

IMPROVED TURNROUND IN FIRTH of FORTH

Report of Shipowners' Association

The fourth annual general meeting of the Firth of Forth Shipowners' Association was held on March 28. Mr. Iver R. S. Salvesen (Chr. Salvesen & Co.) was elected chairman, and Major R. H. Salvesen (Chr. Salvesen & Co.) was re-elected vice-chairman. In his report the retiring chairman, Mr. R. F. Scovell (Currie Line, Ltd.) pointed out that while the intermediate-sized tramp had received some benefit from the changed conditions, freight rates in the Baltic, the Mediterranean, the Near Continent and the coasting trades had not risen nearly so high as in the deep-sea trades, and were adversely affected by the lack of coal cargoes from this country. Operating costs had risen substantially, with the result that practically all liner companies had been forced to make substantial additions to their tariffs.

While the turn-round of vessels in several of the larger United Kingdom ports showed no sign of improvement, he had been glad to find that dock labour in the Firth of Forth ports had worked well, with the result that turn-round had improved considerably compared with the immediate postwar period. Unfortunately recently they had been handicapped by an acute shortage of railway wagons and sheets, and representations have been made to the Railway Executive to remedy matters. The volume of traffic using the Firth of Forth ports during the year had been disappointing. The quantity of timber discharged at Leith showed a serious decrease, and the quantity of cargo and bunker coal loaded showed a further decline. The volume of coal shipped from Methil also showed a disappointing decrease. Traffic to Grangemouth, however, remained at a satisfactory level except for timber.

Handling of Timber

In the Select Committee's report on the Timber Control, evidence was forthcoming that during the past year it had been necessary to send 6,000 standards of timber overland from London to Scotland at an additional cost of £20 per standard. Timber Control had just issued a distribution programme covering the large quantity of Pacific Coast lumber due to arrive in the U.K. during the next few months. This programme showed an allocation to Leith of only 1,500 standards against an allocation to London of 98,000 standards, and to the Mersey of 71,000 standards. "One would have thought that Timber Control would have learned a lesson from their mistake of last year, and would have allocated a larger quantity to Leith, where congestion is all too rare, than to ports in the south where congestion seems to have become chronic."

Shortage of Shipping Space

Merchants are being advised by shipping companies that because of intermittent strikes and the waterside workers' recent ban on overtime in Australia, together with the continuance of the strike in all New Zealand ports, the shortage of ships loading in this country for Australia and New Zealand will be even more acute during April, May, June and July than it has been lately. The companies hope that the warning may help to mitigate the troubles which inevitably will be caused by what they describe as a deplorable situation.

British cargo vessels are now carrying Irish beef to North America. Since the Irish trans-Atlantic trade in frozen beef started last September, most of the shipments—averaging about 200 tons a month—have gone by ships of the U.S. Lines.

The world Premiere of the film "Captain Horatio Hornblower, R.N.," which is to be held on April 12, will be in joint aid of King George's Fund for Sailors and the *Foudroyant* appeal. It will be honoured by the presence of H.R.H. Princess Margaret. A great deal of research at the National Maritime Museum was undertaken by the producers of the film, which takes place in the days of Nelson, to ensure its accuracy.

The 11,000-tons liner *Homeland* (ex-*Brasil*) will be the first passenger vessel under German command to start a direct service between Hamburg and New York. Formerly the Swedish liner *Drottningholm*, she is due to leave Hamburg for New York on June 15. She will have a crew of 266 Germans and will be operated in a twice-monthly trans-Atlantic service by the Home Lines, of Panama. The Hapag-Lloyd Travel Bureau is acting as German agents.

GERMAN SHIPBUILDING IN 1950

A SURVEY OF WORK CARRIED OUT BY THE MAJOR YARDS

By a Special Correspondent

German shipowners are not allowed to build ships of more than 7,200 tons gross or 12 knots speed. When building for German account, therefore, German shipbuilders are restricted to these limits, but they are allowed to build ships for foreign account without restrictions, except for passenger liners. Within the last 12 months German shipbuilding has made good progress within these limits. A total of 116 vessels of 104,100 tons gross has been delivered, of which 50 were cargo ships of 84,800 tons gross, and 67 coasters of 19,300 tons gross.

Since the war, German yards have delivered to German owners 154 vessels of a value of DM479 million. Of these 154 ships, 82 were ordered by Hamburg owners, 30 by owners in Bremen, 30 by owners in Schleswig-Holstein, nine by Niedersachsen owners and three by owners from the Rhine. German shipowners, who suffered a loss of 1,500 million marks through the war, have received no direct assistance from the Government in replacing their fleets. But they get cheap loans to order new ships. Since the war the price of a vessel of 5,000 tons gross has nearly doubled. Within the last six months it has again become difficult for German yards to get materials on time, particularly steel and diesel engines. Prices still go up, and it is difficult to give an exact price and an exact date of delivery when a new vessel is ordered. The shortage of coal, caused by the high export quota ordered by the Ruhr Commission, is the main cause of the present difficulties of the German shipbuilding industry.

The big German yards have made good progress in regaining their former capacity, with the exception of Germany's most important yard of prewar days, Blohm & Voss, which has been completely dismantled. Some of the big yards in Germany have orders for the whole of 1951 and the first months of 1952. German shipping companies want to order fast cargo and passenger liners, but as they are not allowed to do so, it is likely that up to the end of 1951 German shipyards will be chiefly occupied with foreign orders. The following table shows the numbers of ships delivered by the big German yards in 1950:—

Name of Yard	Number of Ships	Total gross tonnage
Deutsche Werft, Hamburg-Finkenwerder	8	18,286
Lübecker Flenderwerke	11	16,969
AG Weser Seebeckwerft	17	13,158
Howaldtswerke AG, Kiel	11	12,377
Lübecker Maschinenbaugesellschaft	7	10,326
Nordseewerke Emden, GmbH	7	10,011
Howaldtswerke AG, Hamburg	7	7,931
Flensburger Schiffbau-Gesellschaft	5	7,664
Bremer Vulcan	9	7,501
Rickmers Werft, Bremen	7	3,438
H. C. Stülcken Sohn, Hamburg	8	3,042
Norderwerft, Hamburg	4	2,702
Schiffbaugesellschaft Unterweser	4	1,622

Deutsche Werft, Hamburg-Finkenwerder

The biggest vessel built by a German yard since the war is the motor tanker *Irland*, delivered by Deutsche Werft to Dansk-Franske Dampskibsselskabet, Copenhagen. This vessel of 10,000 tons gross is also the first to be delivered by a German yard for export since the war. In addition, two fishing trawlers of the 400-tons gross type, one trawler of 500 tons gross, three cargo steamers of 3,400 tons d.w. each for Nordfriesische Reederei and one cargo motor vessel of 4,200 tons d.w. for Oldenburg-Portugisische Dampfschiffsreederei have been completed within the last 12 months. Two cargo motorships of 3,200 tons d.w. each for Oldenburg-Portugisische Dampfschiffsreederei, four motor vessels of 2,200 tons d.w. for Robert M. Sloman, two fruit carriers for Afrikanische Frucht Co., one cargo motor vessel of 5,000 tons d.w. for August Bolten, one of 2,400 tons d.w. for E. Komrowski and one motor vessel of 12,500 tons d.w. and 7,200 tons gross are under construction. There are orders for five tankers of 16,500 tons d.w. each from American and Danish owners, two cargo motor liners of 7,000 tons d.w. each for Ernst Russ, two cargo motor vessels for Horn Linie GmbH, one cargo motor liner of 10,000 tons d.w. for Ostasiatiske Kompagni, Copenhagen, one cargo motor vessel of 500 tons d.w. for AB Transmaria, Helsingborg, one motor ship of 4,25[illegible] tons d.w. for Gulf & Atlantic Shipping Co., Panama, and one motor vessel of 3,200 tons d.w. for Franz Haniel. Deutsche Werft has orders for 175,000 tons d.w. at present. During the last year part of the yard has been occupied on repairs for German and foreign owners.

Lübecker Flenderwerke

This yard was the first one to build vessels of 1,500 tons gross, when this type was first allowed to German yards. The Luebecker Flenderwerke built their own type and delivered most of the 1,500-tons ships. The yard delivered eight vessels of this type, followed by another one this spring. The yard also built two motor trawlers and a little coaster. After Germany was allowed to build bigger ships, The Lübecker Flenderwerke received orders for the well-known Hein-Hoyer-type. The first one of these vessels will be delivered this month to Kauffahrtei Seereederei Ad. Wiards & Co., the next one to Hanseatische Reederei Emil Offen & Co. Two other vessels of this type are under construction for Kohlenimport & Poseidon Schiffahrts GmbH (all Hamburg owners) and the Flensburg company Berhard Howaldt. Two further cargo motor ships of 2,700 tons gross each are nearly ready for launching. The contracts for four vessels of this type have been signed, and one for a steamer of 2,400 tons gross as well. The Flenderwerke also rebuilt some vessels which had been floating hotels or mine sweeping ships.

AG Weser Seebeckwerft

Most of the trawlers delivered to German owners within the last twelve months have been completed by AG Weser Seebeckwerft. They delivered twelve steam trawlers during 1950, and two other trawlers in the first two months of 1951. They have also built three little vessels for cargo and passengers for the Bremen owners Argo Reederei. The Seebeckwerft has also completed one cargo steamer of 1,500 tons gross and a buoy tender. At present there are two motor cargo vessels of 1,500 tons gross each and one motor cargo liner of 7,200 tons gross for Deutsche Dampfschiffahrts-gesellschaft Hansa under construction. This yard has also had a big programme of repairs in the last twelve months.

Howaldtswerke AG, Kiel

This yard in the Baltic port of Kiel has become well known since the war for its renovating of foreign and German vessels, among them the Swedish passenger liner *Gripsholm*. This yard also converted an American tanker into a whaling factory. Howaldtswerke AG, Kiel, delivered the following new vessels in 1950: Four cargo steamers of 1,500 tons gross, four fishing trawlers, one motor trawler and two cargo vessels of 1,000 tons gross each. Two cargo motor ships of 1,000 tons each are nearly completed. They will be delivered to Sartori & Berger this month. One cargo motor ship of 2,200 tons gross is under construction for K. Grammerstorf, another one of the same type for Robert Bornhofen. Two motor trawlers for Norway are under construction as well. This month the motor liner *Skaubryn*, a vessel of which the hull had been built in Sweden, has been delivered to her Norwegian owners. In 1951 two fruit carriers for H. Schuldt and the Afrikanische Frucht Co., a cargo liner of 6,900 tons gross for the Swedish owners Rederi AB Nordstjernan, a cargo motor vessel of 3,900 tons d.w. for the Danish owners Jepsen, a cargo motor ship of 3,250 tons gross for the Hamburg owners F. L. Nimtz, a cargo liner of 4,000 tons gross for Erste Deutsche Walfang Gesellschaft, Hamburg, and two motor vessels of 950 tons gross for the Hamburg owner Otto A. Müller will be ready for service.

Lübecker Maschinenbaugesellschaft

This yard delivered five steamers of 1,500 tons gross each, with a d.w. capacity of 3,180 tons. LMG also delivered two motor vessels of the same size and a floating crane of 100 tons to the port authority of Oslo. Last month the yard delivered the motor cargo liner *Brandenburg* to the Hamburg-Amerika-Linie, a vessel of 2,700 tons gross. At present there are under construction a motor ship of 1,450 tons gross for Heinrich F. C. Arp and a vessel of the same type for the French owners Cie. Franco-Cherifienne, another vessel of 2,700 tons gross for the Hamburg-Amerika-Linie, a motor ship of 2,500 tons gross for Knöhr & Burchard N.fl.

a motor vessel of 2,000 tons gross for the Swedish owners Winck u. Co., and a coaster.

Nordseewerke Emden, GmbH

Emden shipowners ordered four vessels of 1,500 tons gross each from Nordseewerke. These steamers were delivered in 1950. The yard also delivered three fishing trawlers. A cargo motor ship of 2,300 tons gross for Kohlenimport & Poseidon Schiffahrts Gesellschaft has just been completed. Five cargo motor ships of 10,000 tons d.w. each are under construction or will be started in the near future. These five ships have been ordered by Atlas Reederei AG, Ozean Reederei GmbH, Fisser & van Doornum and Seereederei Frigga AG (two ships). Karl Gross of Bremen has ordered a cargo vessel of 2,700 tons gross.

Flensburger Schiffbau Gesellschaft

This yard delivered four cargo steamers of the 1,500 tons gross type and a motor cargo liner of 2,900 tons d.w. for Dampfschiffahrtsgesellschaft Neptun, Bremen. There are at present under construction another 2,900-tons d.w. motor vessel for DG Neptun, two motor ships of 2,700 tons gross each for Atlas Levante Linie AG and one cargo liner of 6,300 tons d.w. for Deutsche Afrika Linien, Hamburg. The Flensburger Schiffbau Gesellschaft has orders for two vessels of 6,300 tons d.w. each for Deutsche Afrika Linien and a motor liner of 6,000 tons gross for Unterweser Reederei AG.

Howaldtswerke AG, Hamburg

This yard has completed many repairs for both foreign and German owners. It has also delivered two cargo steamers of 1,500 tons gross each, and four fishing trawlers and a floating crane for Sweden. This yard delivered the first cargo liner ordered by the Hamburg-Amerika-Linie after the war, named *Hamburg*, a vessel of 2,400 tons gross, which is now trading to the West Indies. The yard has recently completed the passenger steamer *Silver Star* for foreign owners. This vessel has been converted from a former landing craft. The first liner of the Hamburg-Sued has just been completed. This vessel, of 6,300 tons gross, will re-establish the service to South America. Two sister ships are under construction. There are orders for two motor vessels of 5,000 tons gross each for Hamburg-Amerika-Linie and a ship of 2,400 tons gross for the Hamburg owners Brenntag.

Bremer Vulcan

A cargo steamer of 1,500 tons gross and another one of 2,700 tons gross have been delivered to Argo Reederei of Bremen. The yard has also completed two steamers of 1,450 tons gross for the service to Finland, a motor ship of 1,390 tons gross, and three motor trawlers. This yard has also delivered two diesel-electric-driven trawlers. At present there are six cargo motor vessels of 2,700 tons gross each and two fruit carriers of 2,400 tons gross for Norddeutscher Lloyd, Bremen, under construction. There are orders for two tankers of 16,000 tons d.w. each from foreign owners.

Rickmers Werft

This yard was the first in Germany to build all-welded fishing trawlers. The crews of these welded trawlers were completely satisfied with their vessels. Another well known ship, the *Argenfels* of Deutsche Dampfschiffahrts Gesellschaft Hansa, of Bremen, has been completed.

H. C. Stülcken Sohn

A new type of ship developed by this yard is the *Ulmbrueder* vessel, designed for the river Rhine as well as for the high seas. H. C. Stülcken Sohn also delivered four fishing trawlers and some coasters. There are under construction two motor ships of 1,300 tons fross for Mathies Reederei KG, two motor vessels of 1,800 tons each for Gebrueder Ulmann and one tanker of 1,700 tons gross for John T. Essberger. There are orders for two cargo motor ships of 1,300 tons gross each for the Hamburg owners A. Kirsten and two trawlers for Norway.

Norderwerft

This Hamburg yard delivered one cargo motor vessel of 1,550 tons gross, one motor ship of 900 tons gross, one fishing trawler and two coasters. The yard also completed an ice-breaker.

Schiffbaugesellschaft Unterweser

This yard completed the cargo ship *Delia*, of 1,350 tons gross, for DG Neptun, two trawlers and two coasters. Another coaster of 300 tons gross is under construction.

In spite of the number of new ships, delivered to German owners, the average age of the merchant fleet is 27 years. In 1945 the vessels left to German owners had an average age of 43 years, the vessels bought in foreign countries since 1945 have had an average age of 25, the wrecks repaired on German yards have an average age of 28 years. The merchant fleet of Germany, including the trawlers and tenders, consists of 750,000 tons gross today. German owners are not very keen on rebuilding their former services to countries overseas under the present conditions. Their opinion, that it is uneconomical to re-establish those services on a limit of 12 knots speed and 7,200 tons, has been supported by public opinion and the Government. Public opinion in Germany is now much more interested in Germany's merchant fleet than it was before the war.

BOOK REVIEWS

Chartering and Shipping Terms, by J. Bes. (Barker & Howard, Ltd., 79 Fenchurch Street, London, E.C.3. Price, 27s. 6d.)

The value of this book goes far beyond the scope of its title. The author is assistant freight manager of the Nederland Line, and he is fully acquainted with the countless practical problems which have to be answered and calculations which have to be made in the daily transaction of shipping business. The book is divided into sections which deal with such diverse subjects as chartering, freight units, liner conferences, ship types, tonnage and classification, general average and marine insurance, as well as commercial terms and their meaning. In every section, clear explanations are given and often practical illustrations are fully worked out. This is an exceptionally valuable feature of the book, which may be judged the best of its kind which has yet been produced. Detailed timesheets are given, for example, to illustrate the various interpretations of laydays and the calculation of demurrage and dispatch money; photographs, drawings and particulars are given of the principal types of war-built and postwar cargo vessel; while an appendix gives fully worked out voyage accounts for nine typical voyages on a charter basis. Few shipping companies can afford to let their staffs, ashore and afloat, be without easy access to this invaluable work of reference; and it can be strongly recommended for students.

United States Ports, by Dr. George Fox Mott, Ph.D. (Arco Publishing Co., 480 Lexington Avenue, New York 17.)

In a series of short essays in remarkably simple terms, Dr. Mott, perhaps for the first time, records the fundamental factors governing the birth and death, success or failure of the modern port. In his preface he writes:—

"Traffic in any given port is stimulated and made easy or difficult by the positive or negative aspects of a group of factors concerned with port governance and operation. These factors in turn are affected by conditions of mind and matter as well as the spirit and purposes of the cities . . . astride the port centres. These are the factors with which this book deals." It does indeed. Though perhaps it did not set out to be, it is, in fact, a textbook on port economics, operation and utility. Dr. Mott may have been looking at Jacksonville or Gulfport, but the conclusions he has drawn fit Hong Kong or Hartlepools. Trade patterns are different everywhere, but the causative principles remain the same, and as a key to the understanding of these, it is difficult to imagine a shipping sphere in which the book would not be valuable. Perhaps the only regrettable feature is the title, which might seem to indicate that it has a limited value outside the U.S. Nothing could be further from the fact.

Also included are objective analyses of 30 representative U.S. ports.

At a meeting of the River Wear Commissioners, it was reported that coal shipments from the river in 1950 at 3,031,673 tons were 3 per cent higher than 1949, but 32 per cent below the 1938 figures. Imports for the year were 3 per cent higher than 1949 and 32 per cent above 1938. Exports were 32 per cent up on 1949 and 2 per cent above 1938. The Commissioners' gross revenue at £868,575 was £12,861 higher than 1949 and £148,163 higher than 1938.

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M214

Monthly Light Alloys Section

LIGHT ALLOY LAUNCH FOR PERSIA

ALUMINIUM CONSTRUCTION BY ALDOUS SUCCESSORS FOR THE ANGLO-IRANIAN OIL CO.

AMONG the many special craft built by Aldous Successors, Ltd., at their Brightlingsea shipyard, the aluminium alloy launch *Lasharik*, although of comparatively small size, has many points of interest. Designed and built to the order of the Anglo-Iranian Oil Co., Ltd., for their service up-river from Abadan, the requirements called for a substantial, cool and roomy launch with normal form and minimum draught. The principal features of the final arrangement were as follows:

Length over hull	36 ft.
Beam (moulded)	8 ft. 6 in.
Depth (moulded)	4 ft. 6 in.
Maximum draught to keel	1 ft. 9 in.
Machinery—one Gardner 6 L.W. diesel, single-screw	
Speed	9½ knots

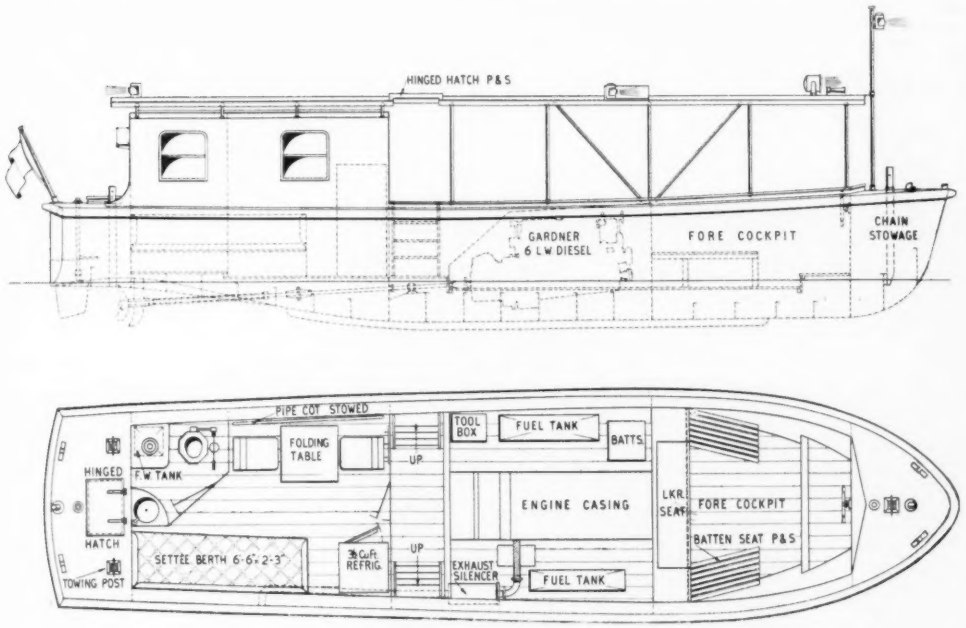
The arrangement of the launch is indicated on the accompanying drawing, the length being sub-divided from forward into fore peak, fore cockpit, machinery space, cabin, and afterdeck peak, with watertight bulkheads between each space except at the after end of the machinery space, where a watertight floor is fitted to the platform level.

In view of the shallow draught requirement, the displacement was appreciably reduced by the use of aluminium alloy in place of normal steel construction, and although a normal round bilge form was adopted, a large area of flat bottom further reduced the draught. In order to provide adequate propeller protection, the bottom of hull in way of the propeller was slightly tunnelled to the extent of about 4½ in., thus enabling the propeller to be lifted by that amount. Twin side keels of teak, about 4½ in. deep, and protected on the lower edge with aluminium alloy strip, gave further protection against grounding damage and provided good docking keels, so that the launch may be lifted and stored on any flat surface without risk of damage to the hull or stern gear.

The hull and superstructure were entirely constructed of aluminium alloy, the whole of the work being carried out under Lloyd's Register inspection and also supervised by the British Tanker Company's technical staff. The type of alloy chosen for the structure was Kynal M35/2, made by I.C.I. Metals, Ltd., suitable grades of hardness being chosen for each part in accordance with the amount of working necessary. The shell plating was 8 S.W.G. thick, supported by transverse frames of $2\frac{3}{4}$ in. by $1\frac{3}{4}$ in. by $\frac{1}{4}$ in. angle bar, both plating and framing being cold-worked to shape. Rivets were generally to British Standards specification STA/AW6D, worked cold. The shell plating was arranged to give a completely flush finish, with internal seam strips and butt straps. No trouble of importance was experienced in working any of the material, despite the amount of shaping required to produce the desired curvatures.

Great care was taken in selecting materials to prevent electrolytic corrosion, and any steel bolts or fittings were either zinc sprayed or cadmium plated. In view of the troubles sometimes experienced from this cause, particular attention was paid to the stern gear, the tail shaft being totally enclosed in an aluminium alloy tube and the propeller cadmium plated.

Although primarily a day launch, the cabin is



General arrangement of the "Lasharik"

The "Lasharik" on trials

arranged to provide comfortable living quarters for short periods, with settee berth, folding berth, folding table and chairs, and toilet space at the after end. The toilet is fitted with a metal washbasin and aluminium alloy W.C., and a small stove mounted over the fresh water tank provides for the small amount of cooking that is required. More important in view of the climate, a large paraffin-operated refrigerator is installed at the fore end of the cabin, with provision for ice making and 3½ cu. ft. storage space.

The propelling machinery consists of a 6 L.W. Gardner diesel engine, developing 78 b.h.p. at 1,400 r.p.m., arranged for both hand and electric starting. In view of the large amount of shallow draught work undertaken by the launch, an enclosed system of fresh water cooling is provided, and alternative sea water inlets are arranged to ensure a constant supply of water to the heat extractor. Electric lighting is fitted throughout, the engine being fitted with a 660-watt 12-volt dynamo which charges a 200 amp-hour nickel-cadmium NIFE battery, the capacity beng ample to provide for engine starting, lights, table fans, and searchlight.

During the trials, which were attended by representatives of the owners and of Lloyd's Register, the launch attained a speed of over 9½ knots, and the manœuvring qualities were excellent. The *Lasharik* marks a further stage in the builder's development of aluminium alloy construction, and demonstrates that, provided proper precautions are taken, many important advantages may be gained by the use of aluminium alloy in small craft.

Aluminium in Lighting Fittings

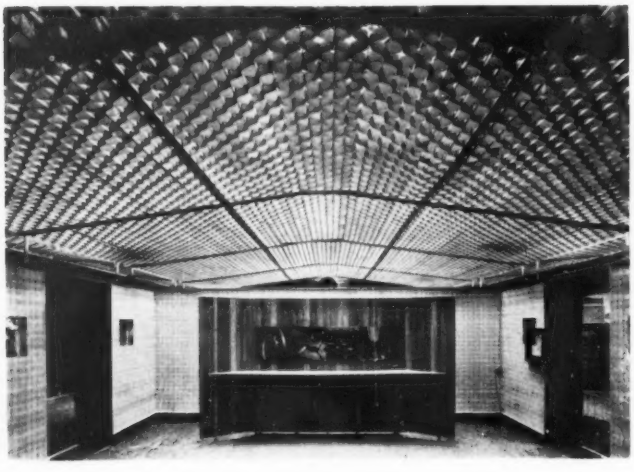
Light Alloys Give Diffused Overhead Lighting

A NEW idea in light diffusion, that has been brought to a high state of development in America, is now available in this country in mass produced standard units, made by Metal Sections, Ltd., of Oldbury, Birmingham. The system is known as "Difulite."

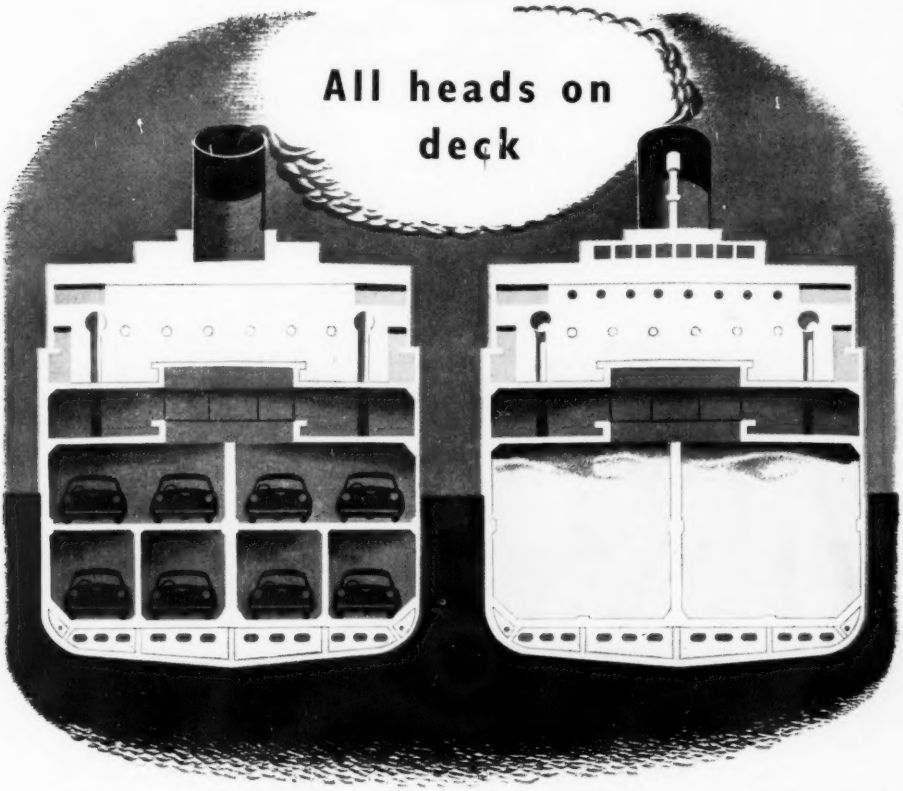
The diffusion unit is suspended in panels over the whole ceiling and under the lighting units, so that the light may pass freely through the panels vertically but progressively more and more light is cut off until the point at which the line of vision is less than 45 deg. to the diffusion panel, when no source of light can be seen. As the normal cone of vision is 45 deg., the eye is not aware of the individual light sources but only of an overall brightness of the ceiling, and a quality of light that closely resembles daylight. It is not possible to see through it except when viewed deliberately from an uncomfortable angle.

The panel is made from continuous strips of thin aluminium, so distributed that the maximum strength for a minimum of material is obtained. The overall pattern is regular but unobtrusive, being a series of waves or curves held in regular rows. This shape practically overcomes the troublesome shadows sometimes encountered with the square cell or egg box type of diffusion panel.

Quite apart from its principal use as an efficient and most attractive light diffusion system for ceilings, it is eminently suitable for inexpensive reconstruction work where a ceiling level is to be lowered or where pipes, or unsightly roof members, or joists are to be concealed. This has an obvious application to ships, while sprinkler systems are not affected by "Difulite" panels, an important point worth noting. The method of suspension is straightforward and requires little skill.



A ceiling of "Difulite" diffusion panels, showing the even lighting effect obtained



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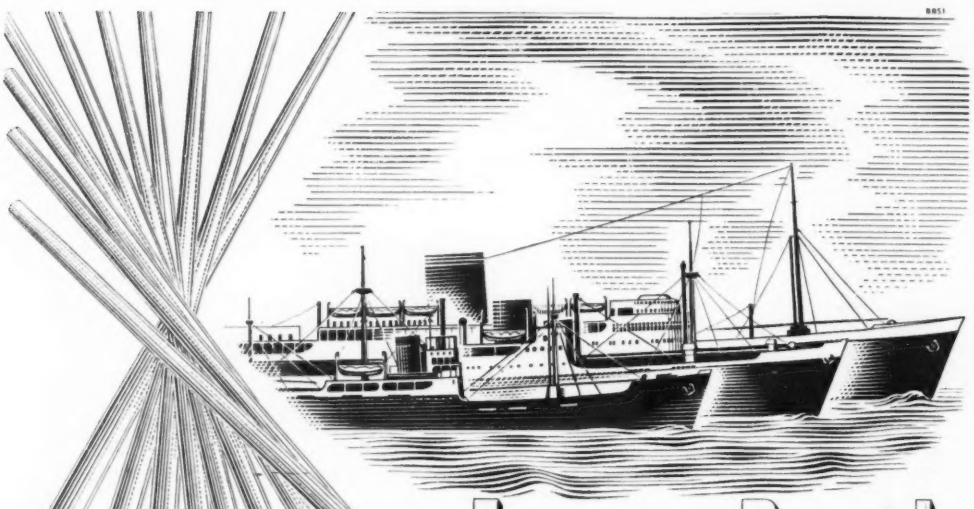

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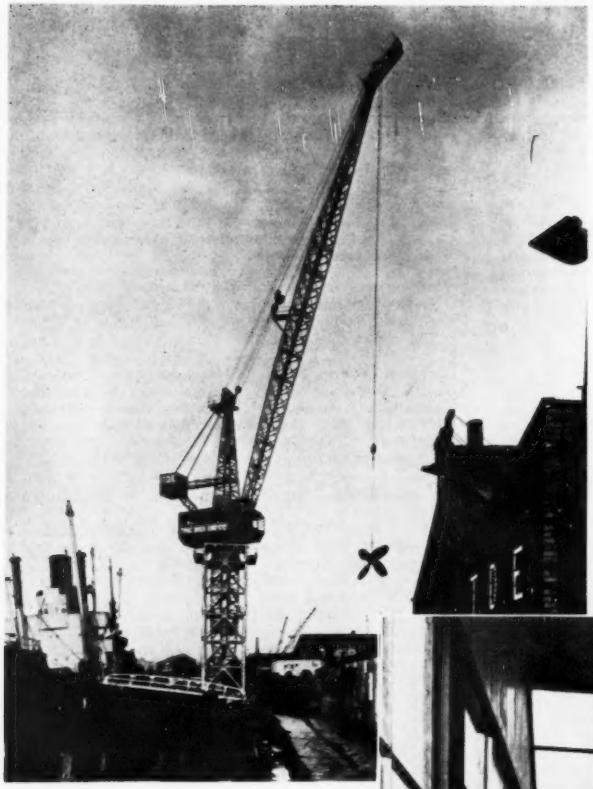


LIGHT ALLOYS IN A JIB CRANE

A 15 tons Monotower Crane built by Butters Brothers & Co., Ltd., for the Tyne Dock Engineering Co., Ltd., in which "Duralumin" has been extensively used

The upper 130 ft. of the 160 ft. jib of this crane, are of "Duralumin S." The crane has a radius of 95 ft. and a capacity of 15 tons, and this use of "Duralumin" is a remarkable tribute to its tensile strength and the inherent stiffness of the design. The dimensions of the jib at mid-section are 7 ft. 3 in. by 6 ft. and the main members are 6 in. by 6 in. angles (B.S. 1161). The saving in weight of the jib—and of consequent stresses—by using light alloy is very considerable. This conception by Butters Brothers & Co., Ltd., which provides for the use of materials having a higher strength weight ratio as the radius of operation increases, is not only fundamentally sound, but technically desirable ; and in monotower jib cranes it is a unique development. At the point where the steel trunk of the jib gives on to "Duralumin," the joint was successfully negotiated by the use of appropriate insulating materials. "Duralumin" is manufactured by James Booth & Co., Ltd., of Birmingham

DANISH SHIPPING AND SHIPBUILDING

A NEW CARGO LINER : SHIPPING COMPANIES' ACCOUNTS

By THE SHIPPING WORLD'S Own Correspondent

The East Asiatic Company's Japanese-built cargo liner *Panama* arrived at Copenhagen on February 24 on her maiden voyage, having been delivered from Kobe Shipyard & Engine Works, Central Japan Heavy Industries, in December 1950. The vessel is built to the highest class of Lloyd's Register. Her dimensions are 481 ft. 5 in. by 62 ft. 4 in., with a draught of 27 ft. 8½ in. She is of 8,956 tons gross and 10,322 tons deadweight. She has a cubic capacity of 632,840 cu. ft. grain and 573,040 cu. ft. bale. There is accommodation for 12 passengers, and she is fitted with all the latest navigational instruments. The main engine, built by Mitsui Shipbuilding & Engineering Co., Tamano, is a 7-cylinder two-stroke single-acting Mitsui-B. & W. diesel, which produces 8,050 i.h.p. at 115 r.p.m. She has a speed of 16½ knots. Her cargo handling gear includes fourteen 5-tons, one 20-tons, and one 60-tons derrick as well as two 3-tons cranes. She is fitted with a 40,000 cu. ft. deep tank which can take 1,350 tons of vegetable oil, and a refrigerated space of 8,380 cu. ft.

Traffic at the port of Copenhagen during February 1951 amounted to 1,535 vessels of 620,061 tons net. For the first time since the war Germany took third place (133 vessels; 46,088 tons) after Denmark (363,049 tons) and Sweden (54,754 tons). England was fifth with 29,744 tons. Gronlands Handel have chartered the s.s. *Maria Dan*, of 2,255 tons d.w., and the *Bjorn Clausen*, of about 2,300 tons d.w., for trading to Greenland during the summer months. Owing to the acute shortage of coal in Denmark it has been found necessary to buy coal in the U.S.A., and so far about 50,000 tons have been fixed at rates varying from about 105s. to about 115s. per ton.

Sale and Purchase

The Steamship Company Dania, of Copenhagen, have bought the new m.v. *Brynje* from Norway with delivery next August. She is a vessel of 7,850 tons d.w., 435,000 cu. ft. bale and a speed of about 13 knots on a consumption of about 15 tons diesel oil. She was built in 1937. The Steamship Company Torm, of Copenhagen, who have just contracted for a 16,250-tons d.w. motortanker at Uddevallavarvet, Sweden, for delivery in 1952, have sold their steamer *Aslaug*, of 2,465 tons deadweight and built by Burmeister & Wain, Copenhagen, in 1927, to the Resurs Steamship Company, of Helsingborg, Sweden.

The Steamship Company Dannebrog (C. K. Hansen), of Copenhagen, who recently sold their cargo liner *Dansborg* to Poland, have ordered a 3,700 tons d.w. raised quarterdeck steamer from the Solvesborg Varv with delivery during the autumn of 1952. The main machinery has already been purchased elsewhere. The Steamship Company Myren (Holm & Wonsild), of Copenhagen, have ordered a 8,600 tons d.w. motor cargo liner at Nakskov Skibsværft. She will have a B. & W. diesel of 4,100 b.h.p. which will give her a speed of about 14 knots.

On March 15 Odense Staalskibsværft launched the motortanker *Elisabeth Mærsk*, building for A. P. Moller. She is of about 16,950 tons d.w. and will have 21 tanks, with a pumproom amidships and a smaller pumproom forward. She will have steam heating in all cargo tanks and will be able to discharge at the rate of 1,000 tons per hour. She will have first class accommodation for officers and crew and all modern navigational aids. Her main machinery consists of a 6-cylinder B. & W. diesel, producing about 6,900 i.h.p. and giving her a speed of 14½ knots. The vessel gets her name from Miss Elisabeth Mærsk-Moller, sister of the owner. The previous *Elisabeth Mærsk* was a steamer of about 3,200 tons deadweight built in 1925, and was sold to Finland a couple of years ago. On March 8 the motor tanker *Rosa Mærsk* was handed over to A. P. Moller by Blyth Dry Docks & Shipbuilding Co., Ltd. She is of about 13,000 tons deadweight on 28 ft. draught, and her main engine is a 5-cylinder B. & W. two-stroke single-acting type, with cylinder diameter 740 mm. and stroke 1,400 mm. It produces 5,000 i.h.p. at 115 r.p.m., giving a speed of about 13 knots. She is fixed for several years' charter to a British oil company.

Accounts

A large number of accounts have been published during the last month and are given below in brief:

The Steamship Company Pacific owns m.v. *London* (5,300 tons d.w.), s.s. *Oslo* (3,600 tons d.w.) and s.s. *Paris* (3,700 tons d.w.). The profit before depreciation on the ships but after payment of taxes amounts to Kr.1,116,727, to which must be added interest of Kr. 42,153, and the amount transferred from 1949, Kr.172,542. Depreciation on the ships of Kr.731,591 is suggested, leaving Kr.599,831, from which must be taken a bonus. A 20 per cent dividend will be paid to the shareholders, and the remaining Kr.181,887 transferred to 1951.

The fleet of The East Asiatic Company consisted at the end of 1950 of 29 vessels, and in addition, 13 vessels were running on timecharter to the Company. The fleet brought in Kr.154.8 million and the total expenses were 135.9 million, leaving a profit of Kr.18.9 million. 10 per cent dividend will be paid to shareholders. The company's total reserves amount to 137.9 million Kroner.

The Steamship Company Orion owns the s.s. *Orion* (3,950 tons d.w.) and the s.s. *Astra* (5,300 tons d.w.). Profits amount to Kr.527,481, and together with Kr.320,719 transferred from last year will be distributed as follows: 15 per cent dividend, Kr.360,000; Dividend Regulating Fund, Kr.50,000; Classification Fund, Kr.100,000; and transfer to new construction reserve Kr.338,200.

The United Steamship Company, of Copenhagen, had at the end of 1950 a fleet of 88 cargo vessels. In 1950 the fleet brought in Kr.162.8 million and the expenses were 128.5 million. The total profit was 38.9 million kroner. A 12 per cent dividend will be paid.

The Steamship Company Dannebrog (C. K. Hansen), of Copenhagen, had a profit of Kr.2,737,904, and out of this Kr.745,103 will be put aside for extraordinary depreciation, a bonus will absorb Kr.47,500, 20 per cent dividend to shareholders Kr.1,120,000, and Kr.163,565 will be transferred to next year's account.

The Steamship Company Heimdal (Martin Carl), of Copenhagen, have four vessels, each of about 3,500 tons d.w. The net profits for 1950 were Kr.649,559, and it is intended to use Kr.313,400 for ordinary depreciation on the vessels for 1950, place Kr.70,000 in the extra reserve fund, pay 15 per cent dividend to shareholders, make an extra donation to the Company's pension fund of Kr.20,000, pay a bonus of Kr.7,474 and transfer Kr.88,685 to new construction account.

The Svendborg Skibsværft had a net profit of Kr.447,730 in 1950, and will pay a 12 per cent dividend to shareholders.

The Steamship Company Norden (P. Brown Jun. & Co.), of Copenhagen, owns seven cargo liners of about 8,300 tons d.w. each. The profit for 1950 was Kr.4,493,644, which it is suggested should be distributed as follows: 15 per cent dividend to shareholders, Kr.1,140,000; placed in Dividend Regulating Fund, Kr.380,000; Pensions Fund, Kr.232,724; Exchange Regulating Fund, Kr.816,142; classification survey account, etc., Kr.1 million; taxes, Kr.700,000; and transfer to next year, Kr.224,778.

THE "OCEAN MONARCH"

NEW CRUISING LINER FOR FURNESS, WITHY

The passenger liner *Ocean Monarch*, which has recently been completed by Vickers-Armstrongs, Ltd., for Furness, Withy & Co., Ltd., is due to sail on her maiden voyage from New York to Bermuda on May 3. Designed principally as a cruising liner, she is an excellent example of the best in British naval architecture and shipbuilding. She will be chiefly employed in cruising from New York to the West Indies and to the ports of the St. Lawrence and of Newfoundland, but she will also assist the liner *Queen of Bermuda* in the New York/Bermuda trade during the more popular seasons, particularly at Easter, and may at times relieve the latter ship to enable her to take larger parties of convention travellers elsewhere.

The *Ocean Monarch* has been constructed to the highest class of Lloyd's Register for passenger ships, and is also designed to comply with the requirements of the Ministry of Transport, the Factory Acts and the regulations, soon to come into force, of the latest International Convention on Safety of Life at Sea. Structurally, the hull of the ship is generally of orthodox construction, excepting for the fact that a certain amount of high elasticity steel of equivalent strength has been substituted for mild steel, and that the shell plating immediately above and below the waterline, among other places, has been increased above survey requirements at the request of the owners. The leading particulars of the ship are as follows:—

Length overall	516 ft. 1 in
Length b.p.	475 ft.
Breadth moulded	72 ft.
Depth to upper deck	39 ft.
Maximum draught	24 ft.
Displacement	13,840 tons
Gross tonnage	13,970 tons
Service speed	18 knots
Number of passengers	430
Grain capacity (total)	95,180 cu. ft.
Insulated capacity	15,490 cu. ft.
Oil fuel	2,106 tons
Fresh water	1,938 tons

The butts of the flat plate keel, shell plating, centre and side girders, promenade deck, the butts and seams of the inner bottom, A, B, C, and Sun Deck plating, O.T. and W.T. bulkheads, etc., have all been welded, the beams of A, B, and C Decks being toe-welded to the decks. In addition to reducing the net steel weight, this has enabled the builders to carry out prefabrication to as great an extent as possible. With a view to keeping top weight down to a minimum, the outer funnel and captain's deck house have been constructed of aluminium, the house tops being sloped to a continuous run parallel with the funnel bands to enhance the streamlined effect.

To comply with the full requirements of the Ministry of Transport and the International Convention on Safety of Life at Sea, it has been necessary to provide eight main transverse watertight bulkheads extending to B Deck. Subdivision of the hull is still further effected up to C Deck by the inclusion of transverse and longitudinal bulkheads forward and abreast of the boiler rooms to form a total of 15 deep tanks for oil fuel and fresh water. Immediately abaft the engine room is the refrigerating machinery compartment, the crown of which has been carried out to the ship's side, the space at each side being further subdivided to form eight fresh and distilled water tanks.

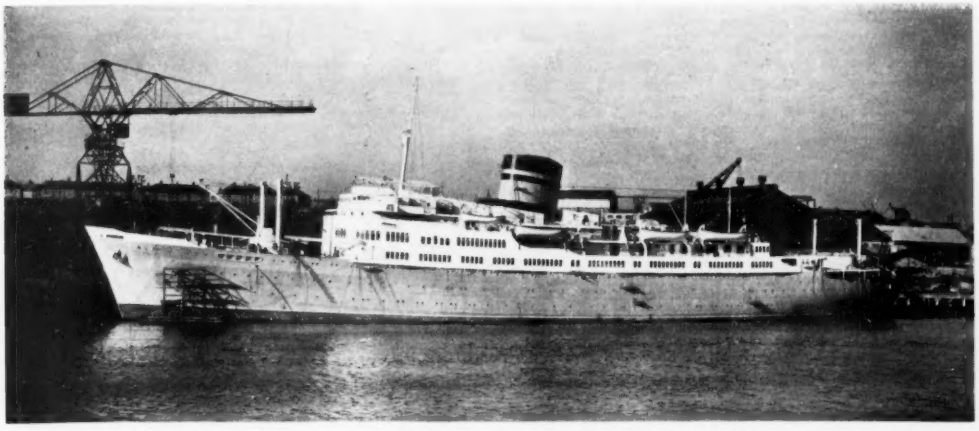
Attractive Appearance

Undoubtedly one of the most notable points about the ship is her appearance, which must be accounted a remarkable success for her designers. The dignity conferred by severe upright and horizontal lines has for a long time been a feature of British construction, but in the *Ocean Monarch* this has been combined with the modernity of the flowing streamline to produce a design which has the best of both styles. Other pitfalls in the modern trends have also been avoided. The funnel, while sufficiently broad and well enough raked to fit in with the streamline, has the necessary height to give dignity, and the way in which the deckheads of the forward deckhouses follow the same sloping line as the funnel top is attractive.

The design and placing of the mast has much to do with the balanced appearance of the ship. When ships were normally fitted with both fore and main mast the achievement of a balanced appearance was not very difficult, but with the advent of the single-masted ship the difficulties have increased. The siting of the mast abaft the bridge, after the naval style, does much to improve things, but where there is only a single mast it is also more than ever important that the mast itself should be attractive and should reflect the general design. The *Ocean Monarch* has the tapered mast popularised by Scandinavian shipbuilders, and it suits the ship extremely well.

As the *Ocean Monarch* is intended primarily for cruising, only one class of passenger is carried, and all passengers have the run of the ship. The passenger accommodation is arranged on the upper five of the eight decks, i.e., the Sun and Promenade Decks, and A, B, and C Decks. The public rooms are all on the Sun Deck with the exception of the dining saloon, foyer and cocktail bar, and the cinema, which are all on B Deck. Passengers are accommodated in single or double staterooms. Some of these have a private bathroom with tub bath and shower, all the remainder having a private shower and toilet cubicle. Suites are available on all decks. These consist of a bedroom with two beds and a concealed bed, a sitting room, and two bathrooms. Two convertible sofa beds and a concealed bed are available in each sitting room. There are no inside cabins.

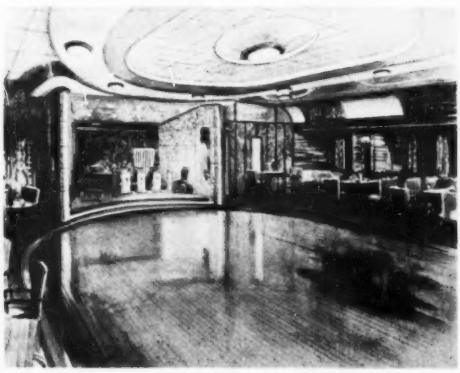
The forward portion of the Bridge Deck, which is stepped up about three feet, is reserved for the accommodation



The "Ocean Monarch" at the fitting out berth at Vickers-Armstrongs' Walker yard

TWO ARTIST'S IMPRESSIONS OF PARTS OF THE SHIP

The Sun Deck and swimming pool



The Coral Café

of the captain and staff captain, chartroom and wheelhouse, W/T office, etc. The Boat Deck, which covers about half the length of the vessel, houses the officers and engineers. The after end of the Boat Deck forms the Sports Deck, and is raised above the normal deck level to give additional height to the Coral Café below.

The Sun Deck

The Sun Deck contains only passenger staterooms and public rooms. The forward end is totally enclosed. The Grand Lounge extends from side to side of the vessel and occupies the fore end of the deckhouse. The Coral Café occupies the after end of the deckhouse and opens on to the Sun Deck itself with a curved promenade which partly overhangs the swimming pool on the deck below. In the centre of the Coral Café is a dance floor. The Promenade Deck extends almost the full length of the vessel. The deckhouse, covering about half the length, is occupied entirely by staterooms separated from the casings by wide corridors. The stairway and lift at each end of the casing lead into large vestibules which in turn give access to an enclosed promenade extending right round the deckhouse and opening on to the open deck and swimming pool at the after end. In the forward vestibule is a shop with a beauty parlour and barber's shop adjacent.

A Deck, except for its extreme after end, is totally enclosed, and consists mainly of passenger staterooms, with P.O.s' berths, crew's messes, galleys, etc., at the extreme fore end. On the port side at the forward end of the staterooms are the doctor's quarters, consulting room, etc., almost adjacent to the male and female hospitals on the open deck. Opposite, on the starboard side, is an officers' mess with accommodation for 36 persons. B Deck staterooms occupy roughly half the length of the vessel on this deck. Aft of the saloon is the main galley containing the various kitchens, bakery, larder, fruit room, etc. The chefs, chief bakers, head waiters, leading cooks, etc., are accommodated in single-berth cabins on the starboard side aft of the galley, and the stewards' mess is arranged on the port side. At the extreme stern there is a large well equipped laundry, with laundrymen's quarters adjoining. P.O.s' accommodation is arranged forward.

On C Deck, staterooms occupy the port side amidships. With the exception of the refrigerated cargo space and steering compartment, the remainder of this deck consists of crew's quarters, recreation rooms, etc.

The architects responsible for the decorative work throughout the *Ocean Monarch* are A. McInnes Gardner & Partners, of Glasgow. This firm has carried out work of a similar nature in a number of previous Furness, Withy passenger liners, including the *Bermuda*, *Monarch of Bermuda* and *Queen of Bermuda*. Throughout the accommodation the endeavour has been made to secure a style which, while modern, will not be dated in future years, and use has been made of the best materials in order to ensure that the appearance will last through the life of the ship.

The staterooms have been designed as far as possible to suit all tastes and requirements. There are nine different schemes of stateroom decoration carried out in groups, use being made of various polished hardwoods and dull finished veneers, such as ash, ivory sycamore and ice birch, painted walls in pastel shades and walls covered with leather cloth of various tints. The furniture is of various timbers to match the surroundings. The stateroom deck coverings consist of Korkoid in various colourings to blend with the decoration and furnishings. The predominant body colours are all of marble effect in alabaster, sycamore and maize with contrasting borders in bright colours. The walls in the private and public bathrooms, lavatories, etc., are finished in green, blue, buff or grey linette Formica. Except for the showers, bathrooms and public lavatories, which are generally tiled in black and white, the floors are of Korkoid with a body colour of harlequin or white marble finished in black and cream.

The captain's and staff captain's rooms on the bridge are generally similar in arrangement, separated by the chartroom and stairway. Each consists of a day room, bedroom and bathroom. The chief engineer has similar accommodation at the after end of the boat deckhouse on the starboard side. The purser and chief steward each have separate day rooms and the doctor a consulting room.

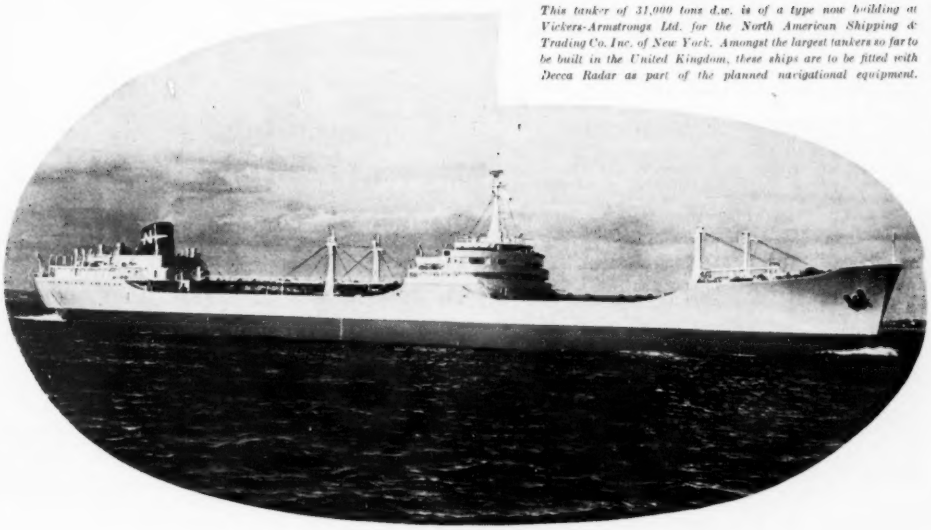
The remaining navigating and engineer officers' rooms are on the Boat Deck, and have an ivory-painted finish with light oak furniture. The floors are laid with terra Korkoid. Hot and cold running water is supplied to a washbasin in each room. The officers' lounge at the fore end of the Boat Deck casing is a comfortable room panelled in natural abele and sapele. The officers' mess is panelled in cherry and cherry burr.

Cabins are provided for stewardesses and hairdressers at the fore end of the C Deck staterooms, with a small sitting room or lounge adjoining. Accommodation for stewards and kitchen staff is arranged on the starboard side of C Deck and right forward. The cabins are large and airy and generally contain six berths, while one-, two- and three-berth rooms are provided for senior ratings. A large comfortably furnished recreation room with upholstered settees, chairs and tables and a bar is arranged at each end of the crew's quarters.

Work of Sub-Contractors

Many sub-contractors have contributed to produce the high standard of accommodation in the *Ocean Monarch*. Over 200 Beclawat windows are fitted throughout the ship. The Grand Lounge has Stormwat watertight screw-operated windows with fanlights, forming the front, aft and side screens. The Sun Deck and promenade verandah are enclosed with Beclawat Weatherwat spraytight windows, these being balance operated and fitted with Beclawat Tenvee balances. The frameless glass is weathered at the sill by means of a lever-operated tightening device, which is also used to lock the window in any position. The windows for the smokeroom and the Coral Café were supplied by Henry Hope & Sons, Ltd. These windows are of the hinged casement type, made of extruded manganese bronze sections and fitted with polished cast bronze handles and stays. The clerestory lights in the Coral Café are operated by special mechanical gearing, which is concealed behind

This tanker of 31,000 tons d.w. is of a type now building at Vickers-Armstrongs Ltd. for the North American Shipping & Trading Co. Inc. of New York. Amongst the largest tankers so far to be built in the United Kingdom, these ships are to be fitted with Decca Radar as part of the planned navigational equipment.



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Included in this extensive tanker fitting programme are Royal Fleet Auxiliaries and ships owned by Athel Line Ltd., C. T. Bowring & Co. Ltd., British Tanker Co. Ltd., Houlder Brothers & Co. Ltd. More than 850 ships of all classes and trades owned by over 200 separate shipowners are being equipped with Decca Radar. This remarkable record is clear evidence of the outstanding quality and reliability of Decca Radar.

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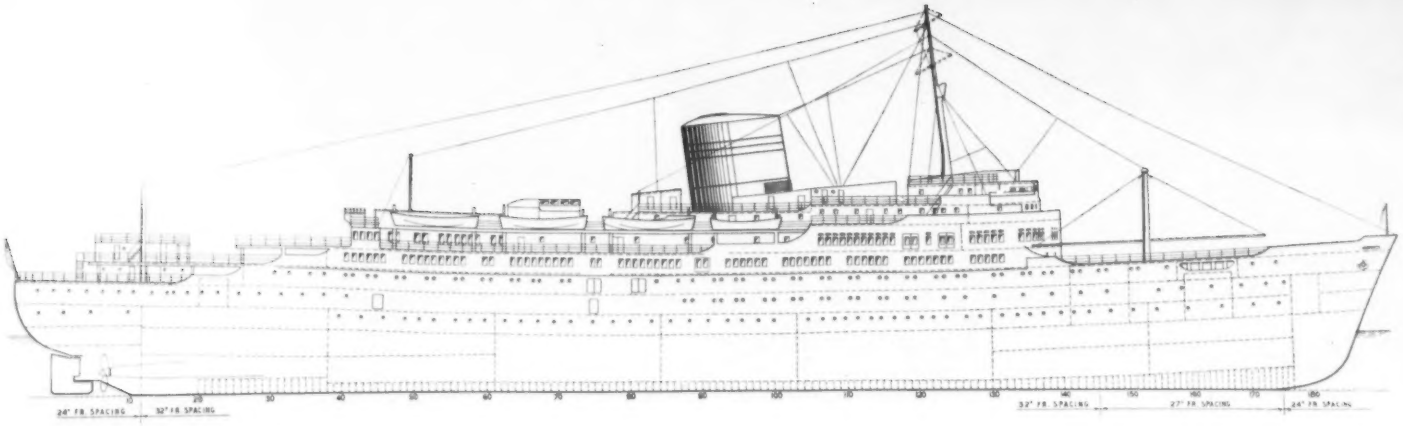
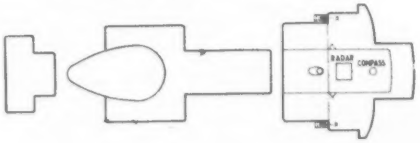
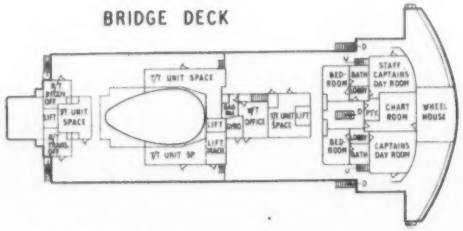


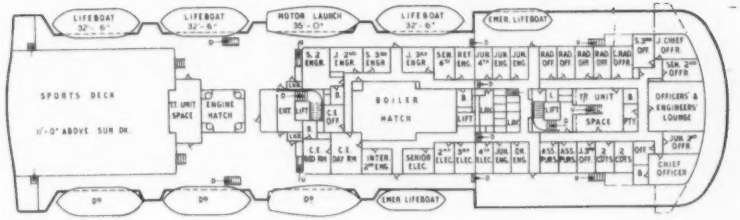
PLAN OF HOUSE TOPS



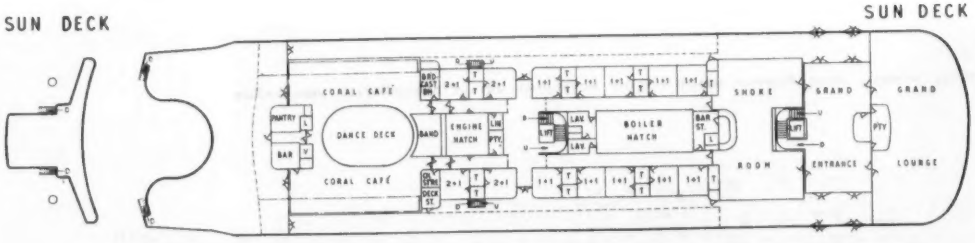
BRIDGE DECK



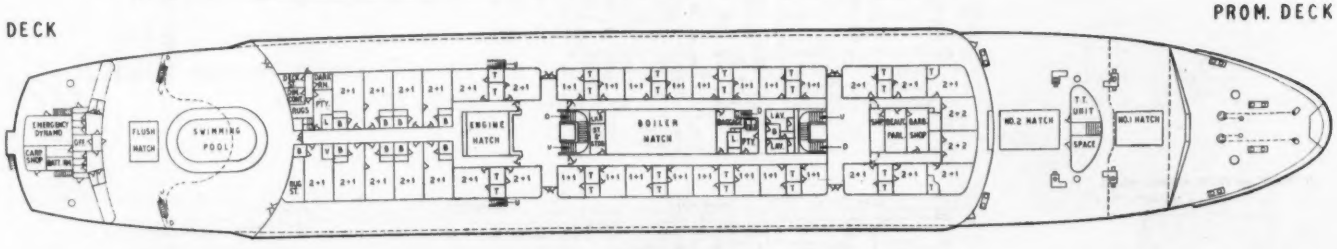
BOAT DECK



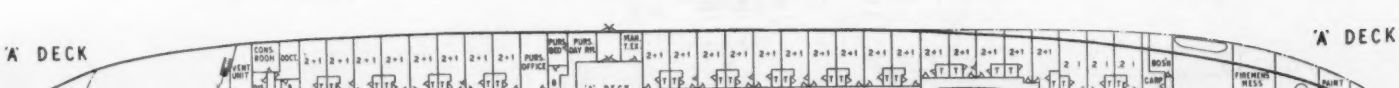
SUN DECK

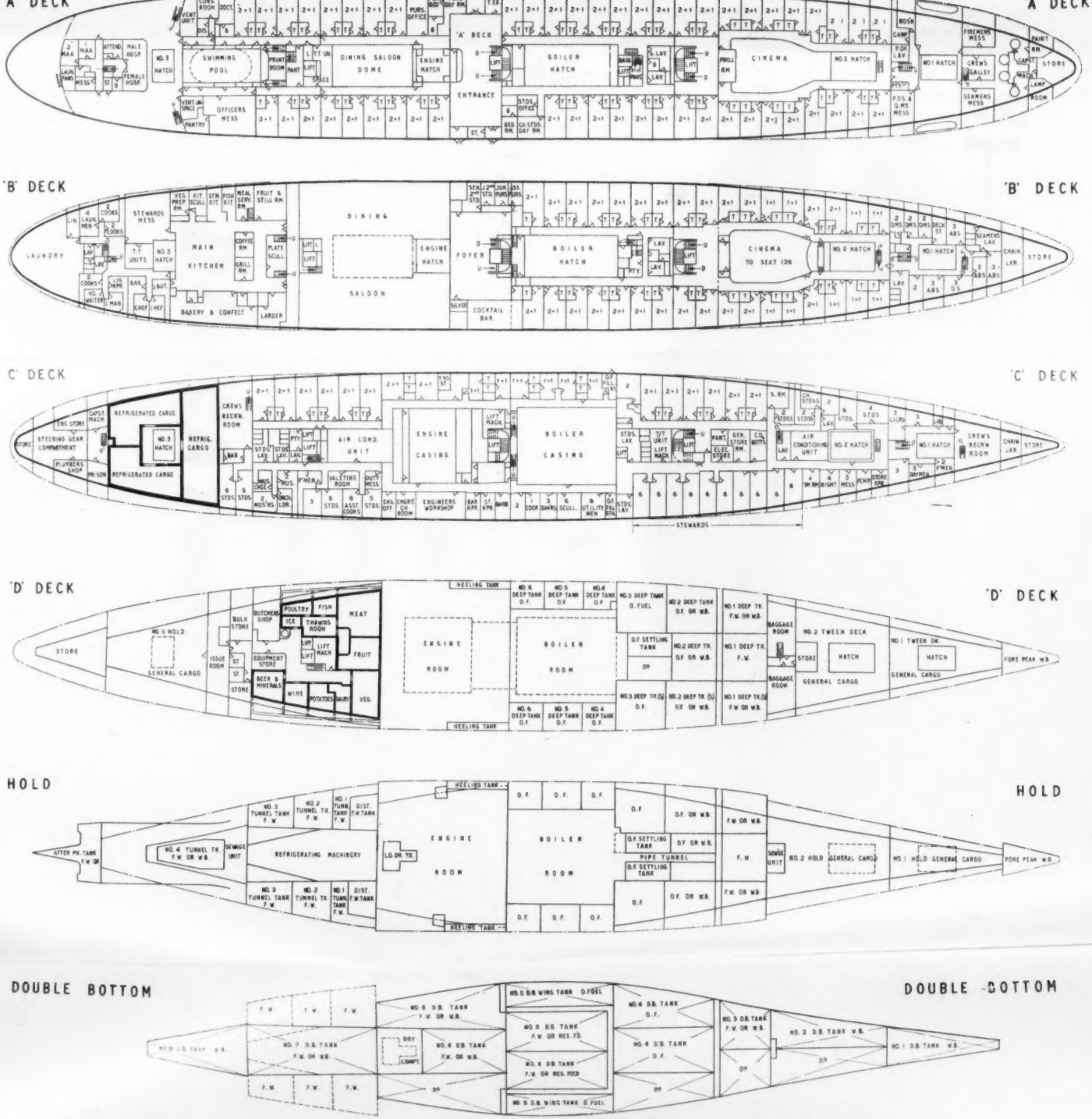


PROM. DECK



'A' DECK





General arrangement of the cruising liner "Ocean Monarch," built by Vickers-Armstrongs, Ltd., Walker, for Furness, Withy & Co., Ltd.

FROM THE FACTORY ——

TO THE

"OCEAN MONARCH"

ANOTHER MAGNIFICENT VESSEL
EQUIPPED WITH

"VI-SPRING" MATTRESSES,
"VITOFLEX" MATTRESS SUPPORTS
AND
CONVERTIBLE BED SETTEES

Supplied through Messrs. C. W. BURNES LTD.
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the decorative panelling. The Coral Café is equipped with two sets of Esavian sliding and folding glazed screens, providing complete protection from the weather while at the same time affording an almost unrestricted view aft. An interesting feature of the glazing is that the glazing bars conform with the deck camber although the head and track, of necessity, are horizontal.

The decorative work in the Grand Lounge, the smokeroom and the entrance from the Sun Deck has been carried out by Hampton & Sons, Ltd., which firm also supplied the furniture and carpets. In the smokeroom extensive use is made of hide, both for panelling, where it contrasts with Scotch elm veneers, and for the furniture.

The saloon ceiling fans were supplied by Berkeley & Young, Ltd., being one of the large range of D.C. marine types manufactured by them. Speed control is by means of regulators, each giving a range of five speeds with "off" position. The fans are all fitted with radio interference suppressors.

Furnishing of Staterooms

The furnishing of the 157 staterooms has been carried out by C. W. Burnes, Ltd., under the direction of the architects. Eleven different colour schemes have been employed, the upholstery materials being in figured wool tapestry and silk brocade, with curtain materials carefully selected to harmonise. All carpets are in a heavy tufted quality made specially for each individual room. Bedspreads are in cream silk brocade with line borders to match the particular scheme employed, and two sets of loose covers in a modern design printed linen are also supplied to all furniture, one set being in nigger brown and ivory, and the second set in old gold, brown and ivory.

Every stateroom has an upholstered chair and a dressing stool, and 47 rooms have built-in convertible bed settees. The latter have been designed and built for the *Ocean Monarch* jointly by C. W. Burnes, Ltd., and Vi-Spring Products, Ltd. These bed settees having a smooth and well balanced action are easily manipulated, and every care has been taken in order to provide the maximum comfort by night combined with the appearance and comfort of a normal settee by day. The accommodation for captain, officers and crew has also been furnished throughout by C. W. Burnes, Ltd. Vi-Spring mattresses have been supplied for the staterooms, as well as for the captain's and officers' accommodation.

Henry Stone & Son (Furniture), Ltd., of Banbury, have supplied all the fitted furniture for the staterooms, i.e., wardrobes, dressing tables, etc. The main features of the furniture are the cross-veneered ends with rounded pilasters, and the vertical veneered fronts provide a very effective contrast. The exterior timbers used are ash burr, bird's eye maple, French walnut and sapele mahogany. Great care has been taken to ensure that pieces of furniture in each cabin match for figure and finish.

Seven Acme steel collapsible lattice gates have been supplied by Acme Metal Works (1921), Ltd., to extend across stores, loading and passenger entrances, and lock there with a heavy padlock. These gates are guided by a fixed or folding top track, and have rollers at the bottom running on a hinged flat bar track. This bottom track folds up alongside the gate when it is bunched to one side, and the whole gate then hinges round against the bulkhead.

Sanitary Fittings and Equipment

All sanitary fittings for the ship were supplied by Shanks & Co., Ltd. Baths, basins and W.C.'s in the passengers' accommodation are in cream colour. The baths are of a rectangular built-in design. Each is fitted with supply fitting so arranged that the piping is concealed, with only the controls showing. Also supplied are overhead showers with mixers for hot and cold water. Basins and W.C.'s are manufactured in the firm's well-known vitreous china. Among other items supplied by the firm are hairdressers' basins and stainless steelwork for galleys.

The equipment of the barber's shop was supplied by Osborne, Garrett & Co., Ltd., and includes an Ogee hydraulic chair which has its raising, lowering and revolving movements operated by one handle conveniently placed at the side of the chair. The No. 11 Ogee towel steamer is electrically operated and is in chromium plate. This steamer has three heats and a rotary control switch, and is fitted with a safety device which automatically cuts off the electric supply should the bottom burn dry. It has a large steam chamber with shaving water draw-off taps and gauge glass. An Ogee No. 512 electrically operated sterilising cabinet is also fitted in the salon.

Milners Safe Co., Ltd., have installed several of their "B" quality fire, fall and thief resisting safes in the *Ocean Monarch*. The outer bodies of these safes are bent from one plate at all twelve corners and the joints are electrically welded.

The refrigerator installed in the dispensary is an Electrolux L.K.300 cabinet. This type of refrigerator can be operated by gas, electricity, kerosene or bottled gas, although the unit installed in the *Ocean Monarch* is operated by electricity. Its design gives a modern streamline effect, and has a high gloss enamel finish and chromium-plated and black ornament.

A large well equipped main galley is situated immediately aft of the dining saloon. The fittings are mainly electrically operated. In the centre of the galley is a 10-oven range, the interiors of the ovens of which are constructed of Monel metal. The range is finished in grey vitreous enamel and is provided with top and bottom heating. On either side of the range are two hot cupboards each about 12 ft. long. The bakery is on the starboard side and is fitted with double-deck baking and pastry ovens, Bain Marie, dough kneader, mixers, roll machine, three large dressers, bread room and cold cupboard, etc. On the port side, the space is divided up into a vegetable preparing room, kitchen scullery, steam kitchen, fish kitchen, meat service room and fruit and still room, each room being equipped with the most modern fittings. At the forward end of the galley is the plate scullery and facing it is the grill and coffee rooms.

The fittings in the grill room include two 3-compartment grills, a salamander and a hot cupboard. The steam kitchen contains three large steam jacketed stockpots, a large steaming oven, clean steam producer and mixer, etc. The larder, fruit room and meal service room are amply provided with cold cupboards, dressers, sinks, slicing and cutting machines and other labour-saving culinary equipment. The steam equipment has been supplied by Henry Wilson & Co., Ltd., and the electric fittings by the General Electric Co., Ltd. The kitchen equipment supplied by the Hobart Manufacturing Co., Ltd., includes two semi-automatic steam heated dishwashers, two 50-quart and one 10-quart general purpose mixing machines, together with an extensive range of food preparing attachments for mincing, shredding, slicing, grating and chipping, etc. The Hobart company has also supplied two electrically-operated 28-lb. potato peeling machines and a combination bowl cutting and mincing machine.

Laundry Equipment

The laundry, situated at the extreme aft end of B Deck, has been equipped and fitted out by Thomas Bradford & Co., Ltd. The plant is designed to handle 350 to 400 lb. dry weight of articles per hour, including ship's and passengers' linen. Two direct electrically-operated washing machines are fitted in the washing department; one has a capacity of 67½ cu. ft. and the other of 21½ cu. ft. These machines, which are made of hard rolled brass, are fitted with patent reversing clutches for reversing the direction of rotation of the inner cylinders. Two 30-in. diameter hydro extractors have been installed for removing the excessive moisture from the clothing in preparation for the drying and finishing processes. A two-roll ironing machine, having steam heated and ventilated rollers 100 in. long and 24 in. diameter, is provided for dealing with all flatwork such as bed linen, table cloths, etc., and two steam heated rotary drying tumblers are provided for drying towels and body linen. A complete set of garment presses is provided for the handling of passengers' personal clothing. These presses are pneumatically driven and comprise sleeve driers, electrically-driven air compressors, electrically-heated collar shaper, and seam damper. Three electrically-heated hand irons and a marking machine for marking passengers' linen are also provided. Each machine is individually electrically-driven and a water saving unit is provided to reduce the water consumption in the washing section. A valeting press is also provided and fitted outside the laundry.

Tiling and terrazzo work has been carried out by Commercial Marble & Tiles, Ltd. The floors of the crew's toilets and pantries are covered with black and white tiles with a 2-in. black glazed unstand and cove round all spaces to facilitate cleaning. Roman stone floor tiles are used in the officers' toilets and bathrooms, with 2-in. upstand in cream eggshell glazed tiles. The showers and footbaths in the officers' and crew's washplaces are built up and formed of terrazzo mosaic. Passengers' public toilets, bathrooms and swimming pool robing rooms are fitted with blue and white and green and white floor tiles to form a basket weave pattern. Tiling of the main galley is carried out in red floor tiles with a ribbed surface. The ribs run diagonally and match up with adjoining tiles, ensuring not only a non-slip surface but also facilitating sluicing down of decks and draining of water to channels which are covered with perforated galvanised plates. Terrazzo mosaic is laid in the

laundry with suitable drain channels formed in the terrazzo. With the exception of the main galley, all the floor tiles are fixed with rubber latex adhesive on a latex underlay, effecting considerable saving in weight and ensuring good adhesion under all conditions.

The floors of the working alleyways have been covered with Durastic combination flooring supplied and laid by Durastic, Ltd. The flooring consists of three layers of different material, each of which performs a separate function. The first layer is of insulating felt coated with bitumen, providing a perfect key to the deck and protection against corrosion. Next, is a layer of cork impregnated in a bituminous compound, followed by a top layer of bright red Durastic hard topping which possesses a high degree of resistance to indentation, even in tropical climates. The flooring is dustless, and, with its attractive coving swept up to the bulkheads, forms a completely watertight and hygienic finish. In the alleyways directly over the insulating chambers and engine room, Durastic combination flooring has been laid direct to slab cork, to which expanded metal reinforcement has been stapled. Electric floor scrubber-waxer-polishers have been supplied by Finnell System, Ltd.

The fresh water filters installed in the *Ocean Monarch* consist of two SW/40/AV type Stellar filters arranged for working in parallel on the pressure tank supply system at 20 tons per hour. Special features are the patented wire wound filter elements which carry the filtering medium and the Autopact cleaning system, dispensing with the normal back washing and the consequent waste of water. The filter is kept in workable condition for long periods without dismantling.

Ventilation

A complete system of Thermotank ventilation and heating is provided throughout the vessel capable of maintaining an inside temperature of 70 deg. when the outside temperature is down to 10 deg. Thermo Reg. control is fitted in all staterooms, etc., the temperature of the air supplied to the public rooms being automatically controlled by modulating motors actuated by thermostats in the compartments served. A total of 44 Thermotank units are fitted, in addition to which special air conditioning systems are provided for the dining saloon, foyer, cocktail bar, cinema and Coral Café. To reduce fan noises to a minimum all ventilation units are arranged in enclosed spaces. Air inlets, filters and exhausts are embodied in the structure to assist in maintaining the clean streamlined appearance of the vessel.

The refrigerating machinery, supplied by J. & E. Hall, Ltd., is situated immediately abaft the engine room. Three vertical twin-cylinder Freon 12 compressors driven by 90-h.p. variable speed motors comprise the main plant, which cools the cargo chambers of some 17,000 cu. ft. to any required temperature down to minus 5 deg. F. It also cools the ship's provision chambers, involving 10 rooms totalling 13,000 cu. ft., to suitable temperatures for the carriage of meat, fruit and wines, etc. In addition, there are 10 cold cupboards in the region of the galleys and a circulating chilled water system serving various points in the ship through a ring main. Chill brine is also supplied for the air conditioning system and the necessary cooling for the marble pastry making slabs. Of the three machines, one is permanently coupled to the cargo and domestic services, one to the air conditioning system and the third machine cross connected to either. Two Drysdale 40,000 gal. per hour sea water pumps and 5 brine pumps are included in the plant. A complete set of long distance electric indicating thermometers is provided with points at all cargo and provision rooms. Temperatures in all compartments and cooling cupboards are automatically controlled. To avoid "cross-taint" an "ozone" plant by Elliott Bros. (London), Ltd., is provided with a point in each provision room, thawing room and butcher's shop. Axial flow propeller type fans supplied by Axia Fans, Ltd., are fitted throughout the system.

The insulation of the cargo spaces has been carried out by the Mersey Insulation Co., Ltd., and generally consists of fibreglass white wool on the overhead and sides all round retained by galvanised steel linings on the "Mersey" system, this system eliminating 75 per cent of the timber grounding. The plates on the overheads, sides and bulkheads are arranged in longitudinal strakes about 4 ft. wide overhead and 2 ft. to 2 ft. 6 in. wide on sides, and extend over two frame spaces where clear of pipes. In way of pipes portable steel linings are provided. The Mersey Insulation Co., Ltd., also provided the insulation for the 24 cold cupboards and for the twelve chambers forming the ship's refrigerated stores. These chambers are insulated with slab cork and special cement facing and are fully equipped with galvanised shelving.

The Newalls Insulation Co., Ltd., were responsible for the insulation of the casings and decks in way of machinery spaces and mechanical ventilation trunking, consisting of asbestos slabs finished with special cement. To comply with the International Convention requirements, the firescreen bulkheads are sprayed with Limpet asbestos, as also are the bulkheads and decks in the accommodation and cinema, etc. Other work carried out by the Newalls Insulation Co. includes the fitting of the air conditioning unit spaces and cinema, etc., with sound insulation consisting of Newalls perforated "Paxtiles," and the insulation of the radio room with slab cork behind shipbuilders' lining. The brine leads to the air conditioning unit spaces and cold cupboards have been insulated with sectional and slab work finished with special cement.

Special attention has been given to the insulation of the galleys, laundry and swimming pool, this work being carried out by the Cape Asbestos Co., Ltd. Caposite 100 per cent pure asbestos preformed block insulation has been used for the bulkhead, deckhead, laundry and galley spaces. The blocks have been secured by expanded metal to 5/16-in. diameter pins, the pins being welded to the deckheads and bulkheads. This insulation has a finishing coat of $\frac{1}{2}$ in. thickness Caposil bulkhead cement. The thickness of the main insulation in two inches, but that for the swimming pool has been increased to three inches. Beams and stiffeners have been insulated by the application of 1 in. thick Caposite, the inside of the channel sections being packed out with asbestos blocks to the full depth of the sections. The insulation of the hot and cold water systems was undertaken by John Taylor, Dunford & Co., Ltd., using magnesia and asbestos sections covered in canvas and cork covered hair felt with canvas coverings for the respective systems.

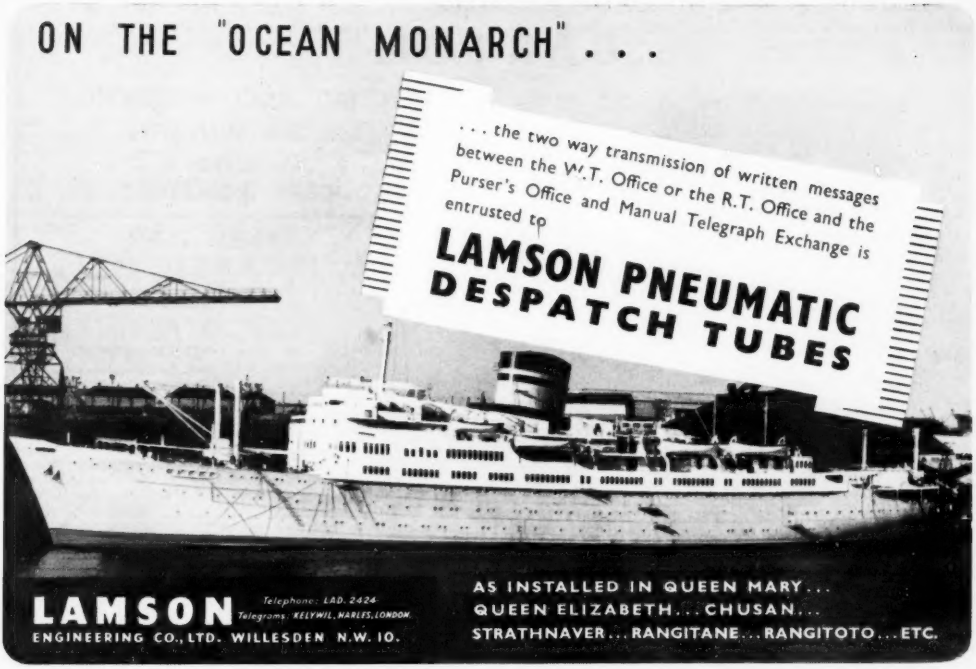
Fire Prevention Systems

Elaborate systems of fire prevention, detection and alarms which more than comply with the official requirements have been provided. Fireproof screen bulkheads and doors are arranged at suitable positions throughout the accommodation. The sliding fireproof doors are of Castodor double sided marine type built on the collapsible gate principle. When closed, these doors are totally covered on both sides by sliding steel panels. The hinged doors have been supplied by Dreadnought Fireproof Doors (1930), Ltd., and are of the well-known Dreadnought "Kleenflush" type constructed of flush steel plates with internal channel framing and stiffening. This type of door has been approved by the Ministry of Transport for use in openings in Class "A" bulkheads.

To counteract any outbreak of fire in the cargo holds and boiler room a Kidde-Rich installation of CO_2 cylinders and piping is fitted which provides sufficient gas to deal with any fires in the holds, and floods the boiler room for extinguishing oil fires. The same piping is also used as part of the delivery system of the smoke detection indicator fitted in the wheelhouse. A "Grinnell" automatic sprinkler and fire alarm system supplied by Mather & Platt, Ltd., protects the whole of the passenger and crew accommodation, public rooms, entrances, passageways, etc. The system is divided into 15 sections each with a separate alarm recording on a special alarm panel installed in the wheelhouse. The equipment is fully automatic and the water supplies consist of a pressure tank having a working pressure of 120 lb. sq. in. and containing 500 gal. of water. An electrically-driven fire pump is also fitted. Shore connections are provided for coupling up to shore water mains when the vessel is in port. Portable fire extinguishers by Kingsford Products, Ltd., are distributed throughout the vessel. These units have a capacity of two gallons, 55 being of the water soda-acid type and nine being foam extinguishers, fitted where there is a possibility of oil fires. John Taylor, Dunford & Co., Ltd., have supplied 5,050 ft. of $2\frac{1}{2}$ in. heavy flax 11-ply canvas hose complete with Nunan & Stove type couplings, branchpipes and adaptors, also 1,200 ft. of $2\frac{1}{2}$ in. rubber-lined canvas fire hose fitted with instantaneous-type couplings.

A total of 14 watertight doors of varying sizes have been installed throughout the vessel. Of the horizontal sliding type with both hand and electric control, these doors have been supplied by Broadfoot & Sons, Ltd. The complete system of electric control has been supplied by J. Stone & Co. (Charlton), Ltd. Each door is operated through gearing by a 2 h.p. motor, controlled from both sides of the bulkhead and from the bridge. By an arrangement of levers the power to open a door is increased by three to four times during the first $\frac{1}{4}$ in. of movement. An indicating panel with a red light is installed on the bridge, showing whether a door is open or closed. A warning bell operated by the master control switch rings 10 seconds before a door begins to close and continues until it is shut.

ON THE "OCEAN MONARCH" . . .



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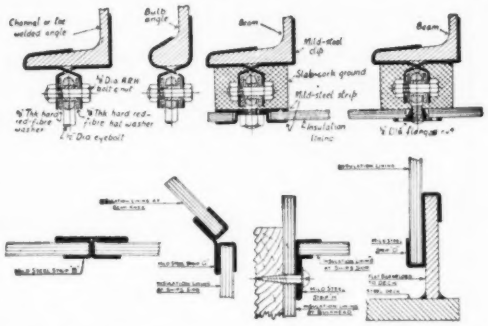

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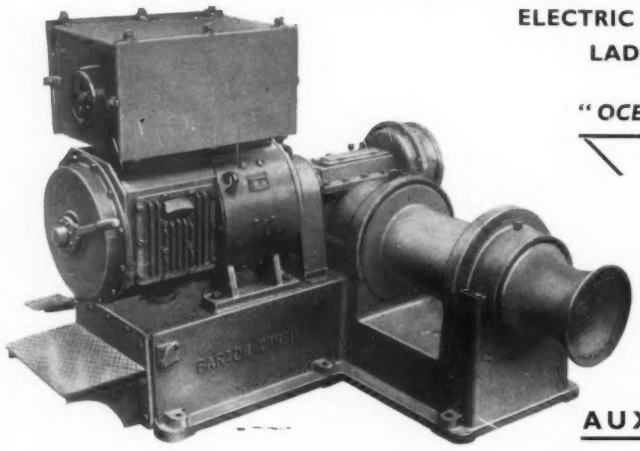

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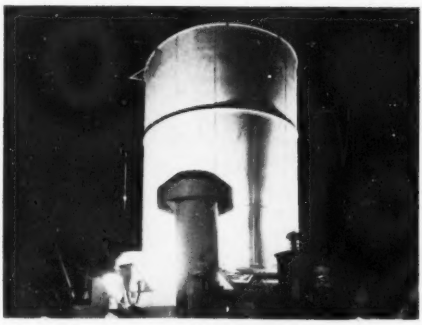

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The sidelights for the *Ocean Monarch* were supplied by the Carron Company and consist of their simultaneous wedge fastening type. The advantages of this sidelight are its equal distribution all round of the binding pressure on the rubber jointing and the elimination of ordinary screw fastenings. Binding is accomplished at one operation by less than one turn of the operating handle. Various types of window have been supplied by J. Stone & Co. (Charlton), Ltd., for the wheelhouse, captains, officers' and engineers' accommodation and also for the staterooms on the sun deck and promenade deck. Nine "Birmabright" alloy lifeboats have been supplied by Hugh McLean & Sons, Ltd., with a total accommodation for 712 persons. Five of the boats are of 32 ft. 6 in. in length and two of 26 ft. The lifeboats are fitted with Schat skates by Schat's Davits, Ltd., which are clamped between keel and gunwale so that they not only facilitate highside lowering, but also protect the boat should it swing against the ship's side while in the falls. Davits have been supplied by Welin-MacLachlan Davits, Ltd., and include one set of overhead gravity davits for handling a 46-person lifeboat, five sets for handling 108-person lifeboats and two sets for 55-person lifeboats, with one set of deck gravity davits for handling a 46-person lifeboat. The davits are complete with single electric boat winches.

Navigational Equipment

The navigating and control instruments installed in the *Ocean Monarch* are of the most modern type and every possible efficiency and safety measure has been adopted. The compasses are of the standard Admiralty pattern and have been supplied by John Lilley & Gillie, Ltd., who also supplied the nautical instruments. Gyro equipment has been supplied by the Sperry Gyroscope Co., Ltd., and includes a Mark XIV master gyro-compass, one steering repeater mounted alongside the steering position in the wheelhouse, one bearing repeater, one repeater in the wireless room and a course recorder. A comprehensive radio installation has been fitted by the Marconi International Marine Communication Co., Ltd. A feature of this installation is the special high-power short wave radiotelephone equipment which enables passengers to talk direct to people ashore and on other vessels fitted with similar equipment. A telephone booth is provided on A Deck, and a private extension is fitted in the captain's dayroom. For main telegraphy transmission a Marconi "Worldspan" transmitter is fitted, while a "Reliance" transmitter is also provided for auxiliary and emergency use. The receivers are of the "Mercury" and "Electra" type covering between them the marine long, medium and short wave bands. A Marconi "Lodestone" direction-finder is installed, and Marconi transmitter/receivers are fitted in two of the lifeboats.

Radar Installation

Radar has been installed by Decca Radar, Ltd., and consists of their marine radar type 159B, fully approved by the Ministry of Transport. There are four separate units. The scanner unit, weighing 175 lb., is mounted on a Decca lattice mast on the bridge deck house top. The overall height of the scanner from the waterline is 75 ft. The receiver unit weighs 76 lb. and is placed on the fore and aft bulkhead on the starboard side of the wheelhouse. The display unit is positioned close to the forward wheelhouse bulkhead, enabling the navigating officer to see the radar picture and have a clear view forward of the ship. The complete power unit, weighing 196 lb., is located in a housing on the bridge deck. A complete "Loudaphone" amplifier and hailing system has been installed by Clifford & Snell, Ltd. The equipment is operated from the bridge with talk-back facilities available in the forecastle, and docking and mooring bridges. Hailing speakers are provided on the wings of the bridge. In the engine room integrally housed microphones are provided instead of louset transmitters.

A navigation light indicator showing when the lights are burning correctly is installed in the wheelhouse. In the event of a light failing an indicating lamp in the indicator will go out and an alarm will sound. This equipment has been supplied by Siemens Brothers & Co., Ltd., as also have the electric helm indicator, which shows the exact angle of the rudder at any time, and the electrical torsionmeter with remote indicators at the control platform from which a quick, accurate reading of the shaft horsepower can be obtained. A muster alarm system by Gent & Company has been installed and is operated from the wheelhouse. There are 66 gongs, bells and buzzers. Seven Nife nickel cadmium alkaline batteries in three separate installations have been provided for the supply of electric current for essential services. The largest battery consists of 184 cells and supplies current for panic lighting, steering motor and watertight doors in the event of failure of the ship's main supply. Two 20-cell 24-volt batteries maintain current for various low pressure services. The ship's automatic telephone system also uses two 24-volt Nife batteries, each consisting of 19 cells.

A pneumatic tube system by Lamson Engineering Co., Ltd., has been installed for carrying messages to and from the W.T. and R.T. offices. It is of the single-line Vacuo Pressure type and the actual services connected are from the W.T. and R.T. offices to the purser's office on A Deck and to the manual telephone exchange, also on A Deck. Normal control of the system is from the W.T. and R.T. offices. Carriers are sent to outstations on pressure and when the carriers are to be returned a signalling device is arranged so that the reversing valve in the outstations can be operated and the carriers returned on suction. The tubes themselves are of 1½ in. bore. The sound and picture projection apparatus in the cinema has been installed by the Western Electric Co., Ltd., and consists of a Westrex sound system with Wester projectors. A non-synchronous record playing unit enables music to be played independently from gramophone records.

Other navigation equipment has been supplied by Kelvin & Hughes, Ltd. A Kelvin Hughes recording echo sounder Type MS 21 has been fitted which is capable of reading from 0 to 720 ft. or fathoms. Also installed are a Kelvin 1½ h.p. Autominor sounding machine, a Kelvin Hughes Ralston stability and trim indicator and Pneumercator tank gauges.

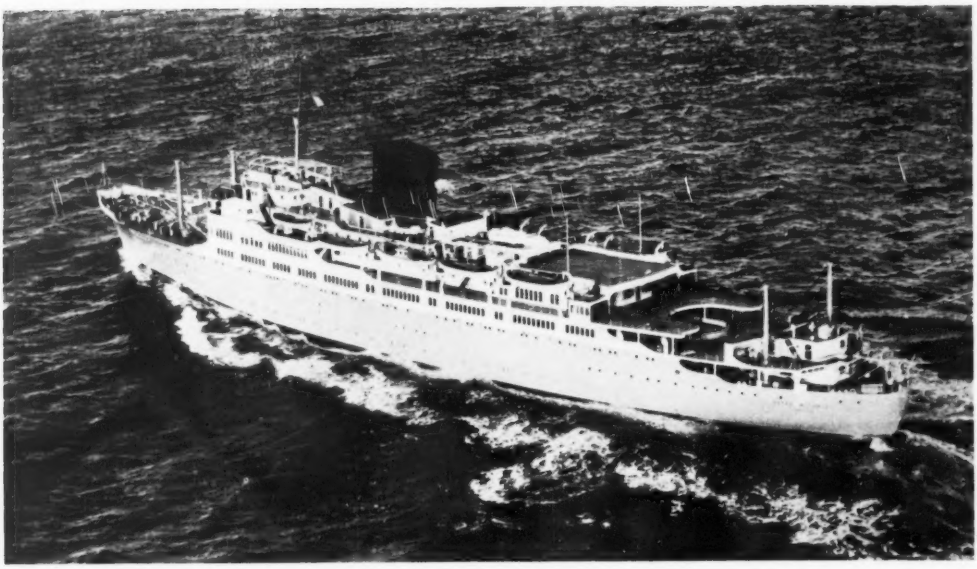
Deck Auxiliaries and Cargo Handling Gear

The cargo handling derricks have been supplied by Stewarts & Lloyds, Ltd., and comprise two 45 ft. long 5-ton derricks, fitted at No. 1 hatch, two 43 ft. 10-ton derricks at No. 2 hatch and two 43ft. 6in. 3-ton derricks at No. 3 hatch. All the derricks are of tubular steel construction and each is complete with mild steel through bar, two slewing eyes and fabricated heel piece. The derricks are operated by six electrically-driven winches supplied by the Sunderland Forge & Engineering Co., Ltd. Of the worm geared type, these winches each have a capacity of three tons at 130 ft. per min. and a light hook speed of 400 ft. per min. Two are fitted with remote control and those for operating the 10-ton derricks are also equipped with warping drums. The derrick blocks, supplied by Ansell, Jones & Co., Ltd., are of the galvanised malleable iron type designed to withstand considerable "battering" and shock. They are fitted with drop forged steel eyes, grey iron sheaves and mild steel sheave pins.

The accommodation ladder winches, manufactured by A. Barton (Engineers), Ltd., raise the accommodation ladders at the rate of 20 ft. per minute. The whole of the equipment of the type of winch used is enclosed in a fabricated steel case enabling it to be conveniently moved to any position on the deck. The unit comprises a totally enclosed compound wound motor, driving a cast iron barrel through machine cut worm gearing. Automatic control is provided by means of a separately mounted reversing controller operated from push buttons. The anchor and cable equipment consists of Byers stockless anchors and "Tayco" 2¾ in. stud link chain cable, supplied by Samuel Taylor & Sons. An electrically-driven capstan by Clarke, Chapman & Co., Ltd., has been fitted to handle the anchors, cables and warping gear. Two warping heads port and starboard are fitted, while automatic bowstoppers are fitted for riding at anchor. The transmission gear and motor are installed on the deck below, while clutches and control are operated from the mooring position. The motor develops 160 b.h.p. at 400 r.p.m., while the cable duty is 30 tons at 38 ft. per min. and the warping duty is 10½ tons at 130 ft. per min. The warping capstans fitted aft, also supplied by Clarke, Chapman & Co., Ltd., consist of two independent units fitted port and starboard, with the motors and gearing on the deck below. The motors develop 60 b.h.p. at 830 r.p.m. and have a pull of 7½ tons at 70 ft. per mm. Clarge, Chapman & Co. have also supplied six 12 in. 500 watt type "B" reflectors and four 18 in. 1,000 watt reflectors for deck lighting purposes, as well as a 12 in. funnel floodlight.

Steering Gear

Supplied by Brown Brothers & Co., Ltd., the steering gear is of the electro-hydraulic type. It is of four-cylinder Rapson design and comprises four single-acting rams operating in opposition to each other, one pair on both port and starboard sides of the rudderstock. Power is by two main units of 35 b.h.p., each driving a V.S.G. variable delivery pump. Both may run simultaneously, though each unit is capable of doing the full duty. At the special request of the shipowners, a small emergency unit is also fitted, ensuring no interruption in the event of failure of supply to the main units. This emergency unit was also supplied by Brown



An aerial view of the ship

Brothers & Company. The gear is operated by telemotor control from the bridge and by hand control from the docking position aft. The rudder itself is supported by one of Brown Brothers' patent rudderhead carriers. The Darlington Forge, Ltd., supplied the fabricated rudder weighing 11 tons and the 4¾-tons forged steel rudder stock, as well as a pair of cast-steel propeller shaft brackets, each of 12½ tons, and structural steel castings totalling 3¼ tons for the fabricated sternframe. Four four-bladed solid bronze propellers (two for spares) of the Heliston design, weighing 7 tons 16 cwt. each, were supplied by J. Stone & Co. (Charlton), Ltd.

Much of the steelwork in the *Ocean Monarch* has been coated with materials by Wailes Dove Bitumastic, Ltd. The engineroom bilges, shaft tunnels and bossings, engineroom heeling tanks, chain locker, steelwork in way of windows, swimming pool and baths and showers, the steelwork below the false floors in the cinema and Coral Cafe, steel decks in main galley, laundry, crew's galley and lavatories, and tanktops in refrigerating machinery space and sewage unit spaces have all been coated with Bitumastic solution and Bitumastic enamel. Bitumastic lightweight deck covering has been used on the steel deck under the winches, capstan and air conditioning units. All waterways on the weather deck have been coated with red Bitumastic solution. Three "Duoflow" sewage plants arranged for underwater discharge of soil have been supplied by J. Stone & Co. (Charlton).

Propelling Machinery

Each of the two screws is driven by a set of geared turbines of Pametrada design, constructed by the Barrow works of Vickers-Armstrongs, Ltd., and capable of developing 11,500 s.h.p. continuously at sea with the propellers making 150 r.p.m. The astern turbines are capable of developing about 6,500 s.h.p. Steam is supplied to the turbines at 425 lb. per sq. in. gauge, and at a temperature of 750 deg. F. Each set of gearing is of the double reduction, articulated type, and comprises two first reduction gears, one for the high pressure turbine and one for the low pressure turbine driving secondary pinions on the main wheel.

The H.P. ahead turbines are of the all impulse type with impulse wheels forged solid with the rotor shaft, while the L.P. ahead turbines are of the impulse reaction type, each having one row impulse wheel followed by 14 rows of reaction blading. An astern turbine comprising two 3-row impulse wheels is incorporated in each L.P. ahead turbine casing and the moving impulse wheels are forged solid with the L.P. ahead rotor. Steam glands of the double pocket type are fitted to each end of the L.P. turbine casing and aft end of the H.P. turbine casing. A treble pocket gland is fitted to the forward end of the H.P. turbine casing with a leak-off pocket exhausting to the bled steam belt on the H.P. turbine. One gland steam condenser of Weir's make is fitted, capable of handling all the vapour from the turbines, and maintaining an ample vacuum to ensure evacuating the most distant gland pocket.

Gearing

Each turbine is connected to the gearing by a flexible coupling of the claw type, and the secondary pinions are driven through "quill-drive" shafts and flexible couplings from the primary gears. The primary gears for the H.P. and L.P. turbines are enclosed in the fabricated steel gear casing and consist of nickel steel pinions, with cast iron first reduction wheels having forged steel rims shrunk on. Main gear wheels are of cast iron with forged steel rims shrunk on, and the secondary pinions of nickel steel and the quill driving shaft of forged steel, all enclosed in a fabricated steel gear case and arranged for efficient lubrication of all gear wheels and bearings.

The H.P. turbines run at 5,610 r.p.m. and the L.P. turbines at 3,540 r.p.m., while the gear ratio is such that with these turbine speeds the propellers run at 150 r.p.m. when the turbines are developing 11,500 s.h.p. Aspinall's cut out governors are fitted to all turbines, shutting off steam to the turbines in the event of the revolutions exceeding a predetermined figure. Steam is also automatically shut off the turbines in the event of an undue drop in the lubricating oil pressure.

Lubrication of the turbines and gearing is provided by three Drysdale & Co., Ltd., electrically-driven "Vertoil" lubricating oil pumps, two working and one standby, each capable of delivering 8,150 gals. per hour against a pressure of 50 lb. per sq. in. plus 10 ft. suction lift. The pumps discharge through three "Flush Flo" filters of Auto Klean make and two Serck oil coolers to two gravitation oil tanks. Suitable bypass arrangements are provided so that oil may be pumped direct to the bearings without passing through the gravity tanks. Chapman's magnetic oil strainers are fitted to the suction of each lubricating oil pump. Two lubricating oil purifiers of Alfa Laval's centrifugal electrically-driven type are provided, each capable of dealing with 250 gals. per hour. Electrically-operated heaters are supplied for the purifiers.

The main condensers are of the Weir "Regenerative" type, having a total cooling surface of 9,860 sq. ft., and are capable of maintaining a vacuum of 28 in. with a sea temperature of 82 deg. F. Thrust blocks are of Michell type independent of the main gear cases and arranged for forced lubrication. The tunnel bearing blocks are of Michell self-lubricating type. All shafting is of solid forged steel.

Electrically-operated turning gear is fitted on each L.P. primary pinion shaft and is of sufficient power to turn the main shafting one revolution in 10 minutes.

Boilers

Steam is supplied by four watertube boilers of the single flow end-fired Yarrow three-drum type at a pressure of 450 lb. per sq. in. gauge and a temperature of 750 deg. F. at the superheater outlet. The boilers are of such capacity that any three when steaming at normal output are capable of giving the vessel a speed of 18 knots in service. The steam and water drums are hollow forged steel with integral closed ends, and superheater of the MeLeSco single-pass type, with multi-limbed elements fitted with MeLeSco "Cencen" ball joints, are arranged between the nests of tubes in such a position as to ensure the smallest variation in steam temperature at various outputs. Supplied by the Superheater Co., Ltd., these superheaters are designed to deal with the normal and overload evaporations from each boiler of 40,000 to 44,000 lb./hour respectively, operating at 450 lb. per sq. in. pressure, and giving a final steam temperature of 750 deg. F.

The heating surface in each boiler is 6,710 sq. ft. of generating surface and 1,430 sq. ft. of superheating surface.

The boilers are arranged to burn oil only under the balanced system of forced draught, with open stokehold, air being supplied by four electrically-driven Howden's fans, each capable of delivering 13,625-15,000 cu. ft. per min. against 7/8.5 in. W.G. air pressure. The forced draught fan trunks are so arranged that by the manipulation of dampers, any one fan may be connected to any individual air heater, and any air heater may be blanked off. Four induced draught fans are fitted, each capable of dealing with 21,700/25,000 cu. ft. per min. against a static pressure difference of 3.25/4.25 in. W.G. air pressure. Air preheaters of the vertical tubular type are fitted in the uptakes, the air heating surface for each boiler being 7,225 sq. ft.

Steam driven soot blowers of Clyde Blower's make are fitted to the boilers and air heaters, and Mono Simplex CO_2 recorders are provided. Howdens dry-type form of soot extraction apparatus has been fitted in the uptakes from the boilers. The oil fuel installation consists of two electrically-driven Wallsend simplex pumping and heating plants, each pump and heater capable of dealing with 10,000 lb. of fuel per hour; the heaters are fitted with thermostatic control.

Auxiliary Machinery

The auxiliary machinery includes Weir's closed feed system. This system comprises two electrically driven extraction pumps, each pump capable of dealing with a normal load of 116,000 lb. per hour, and an overload of 151,000 lb. per hour. Also fitted are two steam jet air ejectors of the 3-stage type, each capable of dealing with 21.8 lb. of air per hour associated with 24 lb. of vapour per hour, and two closed feed control valves of the direct operated type bolted to the condenser shell, each consisting of a 3-in. bore supplementary feed valve and a 2-in. bore overflow valve operated by a single float. One main drain cooler is fitted containing 400 sq. ft. of surface and capable of passing 116,000 lbs. of feed water per hour. The remaining auxiliaries are electrically driven with the exception of the two main feed pumps and one harbour service feed pump which are turbine driven.

The remaining auxiliaries comprise:—

2—Drysdale main circulating pumps of "Upright" type, each 7,500 g.p.m. against 26 ft. head;
3—Drysdale auxiliary circulating pumps of "Upright" type, each 1,250 g.p.m., against 25 ft. head;
1—Drysdale bilge and ballast pump of "Centrex" type, 200 ton/hour against 60 ft. head;
2—Drysdale sanitary and fire pumps of "Upright" type, 50 tons/hour against 180 ft. head;
2—Drysdale domestic fresh water pumps of "Centrex," type, 30 tons/hour against 120 ft. head;
1—Drysdale emergency bilge pump S.O.S. of "Centrex" type, 50/120 tons/hour against 180/60 ft. head;
1—Drysdale fire and bilge pump of "Centrex" type (boiler room), 50/120 tons/hour against 180/60 ft. head;
1—Drysdale fire and bilge pump of "Centrex" type (engine room), 50/120 tons/hour against 180/60 ft. head;
1—Drysdale heeling tank pump of "Upright" type, 40 tons/hour against 50 ft. head;
2—Weir's oil fuel transfer pumps, gear driven, 40 tons/hour against 50 lb. per sq. in.;
1—Weir's drain tank pump, gear driven, 7½ tons/hour against 70 ft. head;
1—Weir's distilled water pump, gear driven, 7½ tons/hour against 70 ft. head;
1—Weir's evaporator feed pump, gear driven, 7½ tons/hour against 70 ft. head;
1—Weir's harbour service feed pump, gear driven, 5,000 lb./hour against 575 lb. per sq.in.;
1—Weir's L.P. feed water heater, 320 sq. ft., raising 116,000 lb./hour from 140 deg. F. to 207 deg. F.;
1—Weir's I.P. feed water heater, 320 sq. ft., raising 116,000 lb./hour from 207 deg. F. to 270 deg. F.
1—Weir's H.P. feed water heater, 270 sq. ft., raising 116,000 lb./hour from 270 deg. F. to 320 deg. F.;
1—Weir's glands steam condenser, 105 sq. ft. total surface;
1—Weir's L.P. fresh water evaporator, 171 sq. ft., 3,500 lb. of vapour per hour;
2—Weir's H.P. evaporators, each 55 sq. ft., 30 tons per day;
1—Weir's auxiliary sea circulated drain cooler, 80 sq. ft.;
1—Weir's auxiliary feed circulated drain cooler, 300 sq. ft. and
1—Weir's auxiliary feed heater, 180 sq. ft., 45,000 lb. per hour from 120 deg. F. to 220 deg. F.

All the pumping equipment supplied by Drysdale & Co., Ltd., is driven by motors of W. H. Allen, Sons & Co., Ltd., manufacture.

Electric current is supplied at 220 volts D.C. by three 550 kW turbo generators of W. H. Allen's make, each with its own self-contained condenser and extraction pump. The ventilation of the machinery spaces is effected by means of electrically-driven Thermotank axial flow torpedo fans, these comprising four 35 in. diameter "Phantom" type supply fans for the engine room, each capable of delivering 14,000 cu. ft. per min. against 1.1/4 in. W.G. pressure, and two 45 in. diameter torpedo fans for the boiler room, each capable of handling 24,000 cu. ft. per min at 1.1/4 in. W.G. pressure.

Plural Starting

The more important auxiliaries in the engine room are arranged on the plural starting system of control, as developed by the General Electric Company. Telegraphs are of Chadburn's mechanical type, comprising twin bridge instruments and twin reply instruments in the engine room. Also one non-reply engine room and boiler room telegraph is supplied. Chadburn's horo-mechanical turbometers and electrical direction and revolution indicators are also provided.

A pressure chamber system for the injection of boiler feed water treatment compound is fitted in connection with the feed system. A fully equipped engineer's workshop is provided containing:—

1—6½ in. S.S. and S.C. lathe;
1—20 in. vertical pillar drilling machine;
1—10 in. by 1 in. double wheel emery grinder;
1—24 in. by 4 in. grindstone; and
1—14 in. stroke shaping machine.

These machines are driven by a 5 h.p. electric motor.

The machinery has been constructed to Lloyd's Register and Ministry of Transport requirements for a passenger certificate and complies with the regulations for a vessel sailing from U.S. ports under the British flag.

The 220-volt D.C. installation is controlled by the main, emergency and panic, and engineroom auxiliary switchboards manufactured by the Sunderland Forge & Engineering Co., Ltd. The main switchboard has an overall size of 31 ft. 3 in. long by 6 ft. 10½ in. high by 4 ft. deep, and controls the three 550 kW. main generators, which are arranged for running individually or in parallel. The feeder circuits for the engineroom supply, refrigerating machinery, galley equipment, lighting, etc., are all controlled from the main switchboard. The emergency and panic switchboards are combined to give a board 13 ft. long by 6 ft. 4½ in. high by 2 ft. 9 in. wide. The emergency board handles the supply from the 45 kW. emergency generator and has interlocks to prevent the emergency and main generators from being paralleled. An automatic changeover to batteries is effected in the event of a supply failure. The 45 kW. emergency generator has also been supplied by the Sunderland Forge & Engineering Co., Ltd., and is driven by a Ruston & Hornsby four-cylinder diesel engine. The engine is arranged with radiator and fan cooling, and has both Plessey cartridge and electrical starting equipment incorporated.

Scientific and Industrial Research Report

The report for the year 1949-50 of the Department of Scientific and Industrial Research, published by H.M. Stationery Office, price 4s. 6d., mentions nearly a thousand projects completed or being studied. Among research projects mentioned is that of the Fuel Research Station, which is engaged in the development of coal-fired gas turbine plant. A vortex combustion chamber has been designed which has a heat release of about 500,000 B.Th.U. per cu. ft. per hour. Combustion efficiency of the vortex is about 90 to 95 per cent. The effects of dredging round the Beamer Rock or of removing it entirely have been studied on a model of the River Forth by the Hydraulics Research Organisation. Other work is being carried out on the movements of the low water channel of the River Wyre and the construction of a weir on the River Eden near Carlisle to maintain a minimum depth of water to feed the pumps of the Willow Holme power station. Increases in steel output of up to 20 per cent are being attained in steelworks using a new and simpler design of air inlet to existing furnaces. Instead of the usual two inlets, the single-uptake open hearth furnace uses only one inlet.

COAL AND OIL

THE EFFECT OF THE NEW BUNKER PRICES

The latest and not entirely unexpected increase in bunker oil prices once again widens the gap between the relative prices of fuel oil and marine diesel oil. The new prices fixed for the U.K. and most Continental ports indicate a rise of 9s. for fuel oil and 11s. 6d. for marine diesel (oil; other examples of increases at principal ports are 8s. and 11s. respectively at Alexandria and Suez and 11s. and 15s. at Cape Town. In only one case, Genoa, is the price increase of diesel oil less than that for fuel oil. Prices at North American ports show no change. With a difference of about £3 per ton in the price of the relative fuels, the shipping industry has now an added incentive to operate motor vessels on residual fuels. The number of vessels already operating on these higher viscosity fuels is but a small proportion of the world's tonnage, but there have been signs in recent months that even the most conservative are again weighing the possibilities of such a step. In many companies it is now accepted that all new tonnage will operate with residual fuel in oil engines, while existing tonnage will be suitably equipped as and when convenient. There is, indeed, much to be gained by such a step: taking as an example a motor vessel burning ten tons of oil per day, bunkering in the United Kingdom and operating about 200 days per annum at sea, the shipowner now stands to save more than £10,000 per annum by using the lower grade fuel. Some allowance must be made, of course, for the slightly higher fuel consumption due to the lower calorific value of the fuel, while it has not yet been proved exactly what the rate of wear is on the cylinder liners and how the fuel effects the working life of other parts. There is little doubt, however, that the savings which can be effected by running the engines on residual fuels will far outweigh any additional maintenance costs, and it must be borne in mind that it has not been shown to date that wear and subsequent maintenance costs are any greater than those incurred with distillate fuels.

Distribution of European Coal and Coke

After two days' study by the Coal Committee of the Economic Commission for Europe, agreement has been reached on a provisional scheme of distribution affecting 12.5 million tons of European coal and coke during the coming three months. It covers 9.5 million tons of coal for delivery to 18 countries and the Free Territory of Trieste, and 3 million tons of coke for 15 countries. The ECE Coal Committee found that, without taking account of imports from extra-European sources, there will be a general shortage of some millions of tons for all countries. Within this total deficit there are absolute minimum requirements for eight countries of 97,200 tons of coal and 149,000 tons of coke from European sources in addition to the export availability already declared by the European countries. These quantities are required to achieve a satisfactory distribution of European solid fuel and to prevent a dangerous decline in the essential services or important branches of the national economy, such as the steel industry, in the countries concerned. In these circumstances, and when all countries had been called upon to make sacrifices in consumption, delegates addressed an earnest appeal to the European producing countries to make a special effort to step up production and export availabilities to help meet the solid fuel requirements of European industries by filling at least the 246,000-tons gap in European supplies. This gap is very small in relation to the 12.5 million tons of coal and coke declared available to the Committee (it is equal to about one-third of a day's production in the United Kingdom, or three-quarters of a day's production in Western Germany) but represents nevertheless the hard core of Europe's solid fuel problem for the coming months. The scheme for trade in solid fuels during the coming quarter includes imports by Austria, Belgium, Denmark, Finland, France/Saar, French North Africa, Western Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Sweden, Switzerland, Trieste and Yugoslavia. It includes solid fuel exports by Belgium, Czechoslovakia, France/Saar, French North Africa, Western Germany, the Netherlands, Poland and the United Kingdom.

Tanker Rates Fall

The signs of a break in the high level of rates which have been apparent over the past few weeks have materialised to a large extent, especially in those rates paid to vessels loading in the West, both for trans-atlantic voyages and for American coastwise trips. In their current report, Lambert Brothers, Ltd., state that the drop in freights in the Western Hemisphere has been brought about largely by the amount of tonnage chartered from Sidon and other Middle Eastern areas to the Northern States, coupled with the diminishing of the demand for heating oil on the American east coast. This, together with the covering of almost all orders for early loading for account of Continental charterers, has built up something approaching a surfeit of tonnage available for loading in the West. Rates to the Mediterranean from Caribbean loading areas show a further decrease, because this is an attractive following business after Sidon to United States North of Hatteras, necessitating only a short ballast voyage. Commenting on the fall in dollar rates, John I. Jacobs & Co., Ltd., point out that it must be remembered that for some time past these rates have been substantially higher than dollar rates ruling elsewhere, and it is not yet clear to what extent this marked drop will be reflected in other dollar trades. Few sterling fixtures have been concluded since the Easter holidays, and so far there is no indication of any corresponding fall in rates. This is attributable to the scarcity of early sterling tonnage, but it is not improbable that some marginal vessels which usually seek dollar freights so long as they are attractive may now pay more attention to sterling quotations.

OFFICIAL NOTICES

New Companies

Drayton Steamship Co., Ltd.—Registered March 13. Nominal capital: £100 in £1 shares. Directors: C. de L. Leach and Marjorie Leach, addresses not stated. Subscribers: L. R. Hallett and A. M. Inglis (accountants), 3 Frederick's Place, Old Jewry, London, E.C.2.

Antonaropulo Bros., Ltd.—Registered March 14. To carry on business of shipbrokers, chartering brokers and agents, etc. Nominal capital: £1,000 in £1 shares. Directors: S. A. Antonaropulos, High Reins, Hexham; A. M. M. Metaxas-Antonaropulos, High Reins, Hexham; D. A. Antonaropulos and J. R. Breckon.

Clansub, Ltd., 2 St. Mary Axe, London, E.C.3.—Registered March 16. To acquire the whole or any of the Clan Line Steamers, Ltd. Nominal capital: £100 in £1 shares. Directors: A. Macintosh, A. Irving and C. F. W. Dyer, addresses not stated. Subscribers: R. G. Norton and R. A. Clark (solicitors), 18 Austin Friars, London, E.C.2.

Mactom, Ltd., 2 St. Mary Axe, London, E.C.3.—Registered March 16. To acquire the whole or not less than 90 per cent of the issued share capitals of the British & South American Steam Navigation Co., Ltd., and Scottish Shire Line, Ltd. Nominal capital: £2,000 in £1 shares (1,950 prefd. and 50 defd.). Directors: A. Macintosh, A. Irving, C. F. W. Dyer, addresses not stated. Subscribers: A. W. Giles, By the Way, Rockshaw Road, Merstham, Surrey (accountant); A. H. Carnwath, The Old Vicarage, Ugley, near Bishop's Stortford (bank official).

[Information from *Jordan's Daily Register of New Companies*]

NINETY YEARS OF FRENCH SHIPBUILDING

Story of the St. Nazaire Shipyards

The Société Anonyme des Chantiers et Ateliers de St. Nazaire celebrated its golden jubilee in 1950, but its parent organisation, the Chantier de Penhöet, began its operations in 1861. The company has prepared a magnificently illustrated book which tells this part of the story of the last 90 years of shipbuilding in France. It recalls that in 1861 the Compagnie Générale Maritime took back the concession granted in 1858 to the Union Maritime for the establishment of two trans-Atlantic routes, one operating between Le Havre and New York and the other between St. Nazaire and the West Indies. This was the birth of the Compagnie Générale Transatlantique, in whose articles of association it was laid down that at least one-half of its fleet must be built in France.

The construction of the hulls of five large passenger liners in the St. Nazaire shipyards was entrusted to John Scott & Company, of Greenock, the engines to be supplied by Le Creusot. Within a year four slipways had been laid out on the Penhöet peninsula and on April 24, 1864, thirty months after the contract had been signed, the *Impératrice Eugénie* was launched, a paddle steamer 355 ft. long, of 3,200 tons gross. The 15 experts who had been sent over from Great Britain found local workers already familiar with the construction of wooden ships, but the transition from wood to steel was achieved without difficulty and within one year the number of workers had risen to 1,200, all of whom were French.

Foreign Competition

When the first order had been completed, in 1866, the work of the yard declined owing to foreign competition, which had been made possible when the free trade agreement of 1860 had broken the monopoly which French shipbuilding had enjoyed since the Navigation Act of 1793. In 1881, however, the monopoly was reinstated with the result that 25 passenger ships were launched in France in 1882. The Penhöet yard launched in 1885 the *Champagne* and *Ville de Tunis*, prototypes of a series of fast passenger ships for the North African service. Both ships were propelled by triple-expansion engines giving a speed of 18 knots. Next year the *Bretagne* was launched, which outsailed the Cunarder *Etruria* and gained the record from Le Havre to New York with a speed of 19.6 knots. Later came the *Touraine*, which regained the blue riband for France with a speed of 21.2 knots.

In 1897 two passenger ships of 12,000 tons gross, the *Lorraine* and *Savoie*, were ordered for the New York route. Their length of 557 ft. and horsepower of 22,000 represented considerable progress, but they were the last to be built by the C.G.T. itself. The capacity of the yard had outstripped the demands of one owner and in 1900 the Soc. Anon des Chantiers et Ateliers de St. Nazaire (Penhöet) was floated with a capital of 8,000,000 francs, derived mainly from funds transferred by the C.G.T., whose close links with the yard were to be retained for more than 30 years.

In 1901 capacity was considerably expanded by the acquisition of the Normandy shipyard at Grand Quevilly, Rouen, which specialised in medium and small ships, with the Penhöet yard supplying the machinery. In 1906 a licence was acquired for the manufacture of the Parsons steam turbine, which in 1908 was fitted to the *Charles-Roux*, the first French turbine steamship. In 1914 Penhöet delivered the first French motorship, the *Motricine*. Licences to build MAN diesels were obtained in 1924 and for Burmeister & Wain engines in 1925. Shipbuilding activities, which had been interrupted by the First World War were resumed with the completion of the *Paris* in 1912 and then came a distinguished number of ships, including the *Ile de France* and *Lafayette*, culminating in the famous *Normandie*. The Penhöet yards were in full production when France was overrun during the Second World War, when they were destroyed, but once again they have been re-equipped with the most modern plant.

Unsinkable Light-alloy Lifeboats

The new North Sea Liner *Blenheim* recently completed by Akers shipyard, Oslo, has unsinkable aluminium lifeboats. They have been built by A/S Aluminiumsbater of Kristiansand, which is producing aluminium lifeboats at the rate of 120 a year for Norway, Sweden, Denmark and Holland. The first of the four aluminium lifeboats for the *Blenheim* was demonstrated recently at Kristiansand. Floating tanks keep the boat afloat even when filled with water. The boat has 740 cu. ft. capacity and takes 74 persons.

ROUND THE SHIPYARDS

Work in Progress on Merseyside

By THE SHIPPING WORLD'S Own Correspondent

The second ship to be completed by Cammell Laird & Co., Ltd., this year, the 2,500-tons twin-screw passenger steamer *Mona's Isle*, built for the Isle of Man Steam Packet Co., Ltd., made her first sailing on the Liverpool-Douglas route over the Easter holiday period. Her delivery marked the completion of a £2,500,000 contract placed with Cammell Laird's by the Isle of Man company for five passenger steamers since the end of the Second World War. The *Mona's Isle*, which has accommodation for 2,300 passengers in two classes and a designed speed of 21 knots, is the fifth vessel owned by the company to bear this name.

During the past month it has been reported that the John Holt Line, Ltd., of Liverpool, have placed orders with the Birkenhead firm for the construction of two cargo liners. As yet no details regarding size, speed or carrying capacity of these ships have been announced.

It was also announced during the month that Cammell Laird's are to undertake the conversion of the *Ceramic* or *Gothic*—whichever is finally chosen—to take their Majesties the King and Queen and Princess Margaret to Australia and New Zealand next year. The conversion will be carried out under the direction of the Admiralty in conjunction with the owners, the Shaw Savill & Albion Co., Ltd. It is expected that the selected ship will be taken in hand in August. The *Ceramic* was built by Cammell Laird's and the *Gothic* by Swan, Hunter & Wigham Richardson, Ltd., Newcastle-on-Tyne—both in 1948. They are passenger and cargo liners of 15,900 tons gross.

Cammell Laird's are also making progress with the conversion of H.M. aircraft carrier *Campania* into an exhibition ship for the Festival of Britain. Details now issued of the vessel's coastwise tour indicate that she will be leaving Merseyside at the beginning of May.

Shiprepairing Hampered

Shiprepairing activity on Merseyside is still being hampered by the ban on overtime which came into force on January 29. Efforts made to solve the position have so far proved abortive. The ban—which affects some 25,000 men—was imposed because of the local employers' interpretation of the national wage award to shipyard workers. The Mersey district committee of the Confederation of Shipbuilding & Engineering Unions is demanding the full increase of 11s. a week in the current minimum rates for skilled workers, and 8s. a week for unskilled workers irrespective of a man's present earnings, even where they exceed the new uniform national levels.

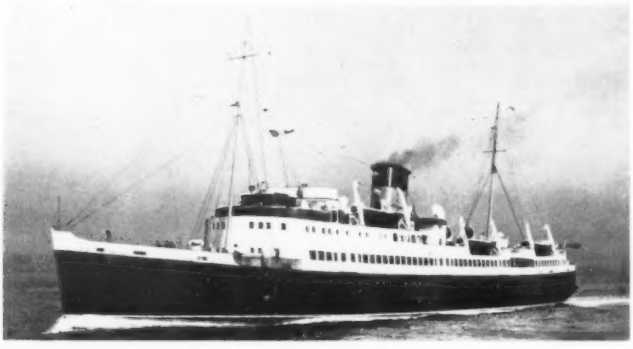
At one time it was feared that the ban might delay Merseyside's heavy liner overhaul programme. Happily this fear was not realised, and all the liners concerned have sailed according to schedule. They have included the *Scythia*, which sailed on March 14, and the *Georgic*, which after refitting cleared for Southampton on March 17.

Drydock work on H.M. aircraft carrier *Eagle* was also completed during the month by Harland & Wolff, Ltd. An interesting feature of this work was the carrying out of heeling trials to confirm that the equipment in the aircraft carrier will function satisfactorily should a serious list develop at any time.

One effect of the overhaul programme has been an improvement in the unemployment position in the shiprepairing industry. Returns for January showed that the total of unemployed was the lowest since September 1947. There were 1,430 unemployed in January compared with 1,537 in December. The latest returns, with those for the previous month in parentheses show that there were unemployed in January 108 (514) skilled workers; 997 (1,006) unskilled workers; 14 (16) semi-skilled workers, and 11 (11) draughtsmen and clerical workers.

Motor Tanker "Ringerd" for Norway

The *Ringerd*, the latest in a series of motor tankers ordered from Harland & Wolff, Ltd., Belfast, by Norwegian owners, has been delivered to Olav Ringdal, of Oslo. The *Ringerd* is a vessel of some 8,200 tons gross with a deadweight of about 12,000 tons on a draught of 27 ft. 6 in. Her principal dimensions are 487 ft. 6 in. length o.a., 460 ft. b.p., 59 ft. breadth moulded and 34 ft. 10 in. depth moulded. She is of normal modern tanker construction, having two longitudinal bulkheads with transverse bulkheads forming 24 separate oil tanks. There are two main pump rooms with an auxiliary pump room arranged forward. The propelling machinery, supplied by the shipbuilders, consists of a 6-cylinder four-stroke single-acting B. & W.-type diesel engine



Passenger Steamer "Mona's Isle"

A passenger vessel of some 2,500 tons gross, the twin-screw turbine-driven steamer *Mona's Isle* has been completed by Cammell Laird & Co., Ltd., for The Isle of Man Steam Packet Co., Ltd. She is designed for service to and from the Isle of Man and has dimensions of 344 ft. 3 in. length o.a., 325 ft. b.p., 47 ft. breadth moulded and 26 ft. depth moulded to shelter deck. First and third-class accommodation is provided for the 2,300 passengers which can be carried by the *Mona's Isle*. Eight private cabins each with berths for four people are included in the first-class accommodation. The twin screws are driven by two sets of Parsons turbines through single-reduction gearing. Supplied by the shipbuilders, the propelling machinery provides the ship with a service speed of 21 knots

Norwegian Tanker from Glasgow

Yet another example of the part Britain's shipbuilding industry is playing in the export drive is the single-screw motor tanker *Dea Brovig*. Built by William Hamilton & Co., Ltd., for Th. Brovig, of Farsund, the *Dea Brovig* is a vessel of about 9,500 tons gross. She is of normal tanker design with cruiser stern and machinery aft. Her principal dimensions are 505 ft. length, 68.2 ft. breadth and 38.5 ft. depth. She has a deadweight capacity of about 16 100 tons. The main engine, built by D. Rowan & Co., Ltd., comprises a 5-cylinder two-stroke Doxford-type diesel

NEW CONTRACTS

Yards in Great Britain and Northern Ireland

Shipowners	No. of Ships	Type	Approximate Tonnages: Gross	Approximate Tonnages: Deadweight	Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
John Holt Line	2	Cargo	—	—	—	—	—	—	—	Cammell Laird
Stephenson Clarke	1	Collier	—	2,000	—	—	8-cyl. diesel	1,500	British Polar Engines	Grangemouth Dockyard
J. Fisher & Sons	1	Cargo coaster	—	750-800	—	—	5-cyl. diesel	850	—	Scott & Sons
N. G. Livanos Piraeus	2	Cargo	—	10,000 (each)	—	12	Tr.-exp steam, Bauer-Wach turb	3,050	Shipbuilders	Wm. Gray
Bolton S.S. Co.	1	Cargo	—	10,100	—	11.5-12	Tr.-exp steam, Bauer-Wach turb.	—	Shipbuilders	Smith's Dock
Anglo-American Oil Co.	1	Tanker	—	26,500	—	—	Geared turbine	12,500	Shipbuilders	John Brown
Tidewater Commercial Co., Baltimore, Md.	1	Tanker	—	19,000	—	—	Steam turbine	—	Shipbuilders	John Brown
A/S Borga (Petter Olsen), Oslo	1	Cargo	—	2,500	—	12.5	Fredriksstad steam motor	1,320	Shipbuilders	Hall, Russell
Baltic Trading Co. Co.	1	Tanker	—	20,000	—	15.5	Sin.-scr., dble.-red. geared turbine	—	D. Rowan	Blythswood S.B.
Skibs A/S Wm. Hansens Rederi, Bergen	1	Tanker	—	3,500	—	11	Sin.-scr. tr.-exp. steam	—	D. Rowan	Blythswood S.B.

Commonwealth and Foreign Yards

Simonsen & Astrup, Oslo	1	Tanker	—	16,200	—	14.5	Diesel	—	—	Uddevallavarvet
D/S/S Dannebrog, Copenhagen	1	Cargo	—	3,700	—	—	Steam	—	—	Solvesborgs Varvs & Rederi
Charles Schiaffino & Co. Algiers	1	Cargo	5,750	—	—	13.5	B. & W. diesel	4,200	—	Ch. Navals de Caen
Cie. du Canal de Suez	1	Floating dock		5,000 (lifting capacity)	—	—	—	—	—	Atel. et Ch. de la Loire, St. Nazaire
Cie. de Transports Oceaniques, Paris	1	Cargo	—	7,080	—	15.5	Sulzer diesel	5,600	—	Atel. et Ch. de la Loire
Etablissements Odon de Lubersac, Paris	1	Cargo	—	7,080	—	12	Tr.-exp. steam, Bauer-Wach turb.	—	—	Atel. et Ch. de Bretagne, Nantes
Cie. Gen. Trans-atlantique, Paris	1	Banana carrier	—	—	—	17	B. & W. diesel	6,000	—	Atel. et Ch. de Bretagne
Cie. Nantaise des Chargeurs de l'Ouest, Nantes	2	Cargo	—	1,650 (each)	—	13	M.A.N. diesel	1,500 (each)	—	Atel. et Ch. de Bretagne
Cie. Nationale du Rhone	1	Bucket dredger	—	—	137.8 (long)	—	Non-propelled	—	—	Atel. et Ch. de Bretagne
Pecheries de Fecamp	1	Deep-sea trawler	1,386	—	—	—	Christiansen & Mayer steam	1,400	—	S.A. des Anciens Ch. Dubigeon, Nantes
Soc. Navale Caennaise	2	Cargo	—	1,650 (each)	—	13	S.G.C.M. diesel	1,900 (each)	—	S.A. des Anciens Ch. Dubigeon
Nantes Port Authority	1	Bucket dredger	230	—	—	5.5	Sulzer diesel	200	—	S.A. des Anciens Ch. Dubigeon
Cie. de Nav. Paquet, Marseilles	1	Ground nut carrier	—	4,200	—	13	Sulzer diesel	3,500	—	S.A. des Forges et Ch. de la Mediterranee, La Seyne
Toulon Port Authority	2	Tugs	—	—	82 (long)	—	Tr.-exp. steam	300 (each)	—	S.A. des Forges et Ch. de la Mediterranee
Yamashita Kinkai Kisen K.K. Kobe	1	Cargo	—	9,000	—	—	Diesel	5,525	—	Hitachi S.B. & E. Co. Innoshima
Toho Kaiun K.K., Tokyo	1	Cargo	—	9,000	—	—	Diesel	5,000	—	West Japan Heavy Industries, Nagasaki
Daido Kaiun K.K., Kobe	1	Cargo	—	9,000	—	—	Diesel	5,000	—	West Japan Heavy Industries, Nagasaki
Kyoritsu Kisen K.K., Tokyo	1	Cargo	—	8,500	—	—	Diesel	8,000	—	Nippon Steel Tube Co., Yokohama
Hinode Kisen K.K., Tokyo	1	Cargo	—	7,500	—	—	Steam turbine	2,800	—	Nippon Steel Tube Co. Shimizu
Transporti Marittimi e Terrestri Vivaldi & Giacomini, Genoa	2	Cargo	2,400 (each)	—	—	—	Diesel	2,200	—	Cant. Navali di Taranto
Swedish owners	1	Cargo	4,400	6,700	350.7 b.p. × 51.8 × 21	14	Diesel	—	—	Rickmers Werft, Bremerhaven
O. Becker, Hamburg	1	Coaster	300	430	—	—	Diesel	—	—	W. Holst, Hamburg
Capt. Brohan, Hamburg	1	Coaster	600	1,000	—	—	Diesel	—	—	J. J. Sietas, Hamburg
Friedrich A. Detjen, Hamburg	1	Cargo	—	4,200	—	—	Diesel	—	—	Lubecker Masch Gesellschaft, Lubeck

LAUNCHES

Yards in Great Britain and Northern Ireland

Date	Shipowners	Ship's Name and/or Yard No.	Type	Approximate Tonnages: Gross	Approximate Tonnages: Deadweight	Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Mar. 16	India General Nav & Rly Co.	*Mangal* (158)	Barge	550	—	—	—	Non-propelled	—	—	Clelands (Successors)
Mar. 20	Fowey Harbour Commissioners	*Mixtow*	Barge	149	—	—	—	Non-propelled	—	—	Brazen Island Slipway & Eng. Works, Fowey
Mar. 21	Bacia do Prata Nav. Service	*Tupinamba* (628)	Tug	469	—	—	—	Diesel	—	—	John Morris & Co. (Gosport)
Mar. 22	Straits S.S. Co., Singapore	*Kimanis* (481)	Pass. & cargo	3,100	—	312 o.a. and 285 b.p. × 51 × 22	13.75	Tw.-scr., 8-cyl Polar diesel	2,560	—	Caledon S.B.
Mar. 26	Cia. Nacional de Nav., Lisbon	*Save*	Cargo and pass.	—	1,250	240 × 41.25	—	Tw.-scr. diesel	1,800	British Polar Engines	Grange-mouth Dockyard
Mar. 28	Elder Dempster Lines	*Aureol*	Pass. and cargo liner	—	—	538 × 70 × 36.5	16	Tw.-scr., 4-cyl. Doxford diesel	10,860	Shipbuilders	Alex. Stephen

MARITIME NEWS IN BRIEF

From Correspondents at Home and Overseas

A SMALL committee has been established in Australia by the General Committee of Lloyd's Register of Shipping to advise them on matters affecting the society's work and interests in that country and New Zealand. Lt.-Gen. Sir Leslie Morshead, the general manager of the Orient Line in Australia, has been appointed chairman of the committee, the other members being Mr. W. E. C. Gregory (Port Line, Ltd.), Mr. N. E. Jones (Broken Hill Proprietary Co., Ltd.), Mr. G. K. Kryger (Wilh. Wilhelmsen), Mr. M. V. Miller (Union Steamship Co. of New Zealand, Ltd.), Mr. I. J. Parker (Huddart Parker, Ltd.) and Mr. A. G. Potter (Birt & Co. (Pty.), Ltd.).

MR. ROBERT KELSO, chairman and managing director of the General Steam Navigation Co., Ltd., having reached the age of 70, is to retire at the 48th annual general meeting of the company on April 27 and Mr. J. W. Coats has been appointed as his successor. Mr. Kelso will also relinquish his chairmanship of the Moss Hutchison Line, Ltd., the New Medway Steam Packet Co., Ltd., and the Great Yarmouth Shipping Co., Ltd., and the other subsidiaries of the G.S.N. company and also his directorship of the London Scottish Lines, Ltd.

MR. A. F. KEEN, who, as announced in last week's SHIPPING WORLD, has retired from the post of traffic manager of the Manchester Ship Canal Company, has accepted an invitation to join the board of Thor Thoresen (Manchester), Ltd., as governing director.

SIR COLIN ANDERSON has been appointed by the President of the Board of Trade to be a member of the Council of Industrial Design.

HOWARD TENENS, LTD., have appointed Mr. H. B. Coppard and Mr. R. H. J. Thomas directors of the company.

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THE passenger liner *Georgic*, chartered by the Cunard Steam-Ship Co., Ltd., from the Government for seven North Atlantic voyages, left Southampton on March 22 on her first voyage to Halifax, Nova Scotia and New York via Le Havre and Cobh. In addition to a large number of British passengers travelling under the new immigration schemes with the Canadian and Ontario Governments, there were parties of emigrants from France, Holland, Belgium, Germany and Italy. The *Georgic* will be making westbound calls at Halifax on the first four of the seven voyages, from Southampton to New York.

RESUMPTION of the Bugsier Line service between Hamburg, Bremen and Bristol, took place last week with the arrival of the steamship *Hoheweg* (1,088 tons gross) at City Docks, Bristol. The line was operated regularly until August 1939, and it is now hoped to offer a regular fortnightly cargo service. The Bristol agents are Edward Stock & Sons, Ltd., Queen Square, Bristol 1.

THE 17th Congress of Chambers of Commerce of the British Empire is to be held in London during the week beginning June 11. Princess Elizabeth will open the Congress. The first Congress was organised by the London Chamber of Commerce in 1886.

OWING to increased costs of operating, stevedoring and port charges, the Conference of Malta and Alexandria Steamship Companies has increased the tariff rates of freight from United Kingdom loading ports to Alexandria, as from April 2.

THE death has occurred of Mr. G. Harrison, a former principal surveyor with Lloyd's Register of Shipping at Sunderland. Mr. Harrison, who was 94, retired from a similar position at Newcastle-on-Tyne 30 years ago.

COUNCILLOR C. MCFETRICH, a director of Bartram & Sons, Ltd., has decided to retire from Sunderland Town Council owing to pressure of business. He joined the Council nearly nine years ago.

MR. R. O. HEPTINSTALL, yard manager for 16 years with J. L. Thompson & Sons, Ltd., has retired at the age of 65 after 50 years in Wearside shipbuilding.

• • • •

THE Silver Line, Ltd., has entered into agreements with the Cunard Steam-Ship Co., Ltd., for the sale of the cargo liners *Silverbriar* and *Silverplane*. The ships will be delivered later in the year, and the Cunard Company propose to operate them in their regular North Atlantic cargo services. Built by Joseph L. Thompson & Sons, Ltd., in 1948, the vessels are sister ships and each has a gross tonnage of 7,242 and a deadweight of 10,370 tons. The *Silverbriar* and the *Silverplane* are the last of the six vessels of the Silver Line's postwar building programme, the other vessels having been sold to Alfred Holt & Company (three vessels) and the Indo-China Steam Navigation Co., Ltd.

A CONTRACT for repairing the tanker *Atlantic Duchess*, owned by S. G. Livanos, has been received by William Gray & Co., Ltd., who completed the vessel last November. The *Atlantic Duchess* was severely damaged by an explosion while lying at Swansea early in February and broke in two.

THE first ship purchased from abroad by Japan has arrived at Yokohama. She is the 5,011-tons vessel *Dona Nati*, a former Philippine cargo ship now owned by the Mitsui Shipping Company.

MR. O. H. CORBLE, Chief Officer (Marine), Railway Executive, has retired after 43 years' service with the Great Northern, L.N.E. and British Railways.

AMONG goods recently added to the list of those freely importable from all countries are iron and steel scrap, iron ore and pig iron.

MR. E. J. LOWE and Mr. E. Wilson have been elected directors of Thos. Firth & John Brown, Ltd.

MR. C. SOORD is the newly appointed full time secretary of the London General Shipowners' Society. Mr. Soord joined the staff of John Swire & Sons, Ltd., in 1920 and remained with them working on behalf of the Blue Funnel Line until the outbreak of the Second World War. During the war he served in the Army, mostly on the staff of various formations. In 1945 he joined the Glen Line, Ltd., remaining with them until his recent appointment as secretary of the London General Shipowners' Society

MR. S. M. SHAW, managing director of the Hall Line, Ltd., is vice-chairman of the Liverpool Steam Ship Owners' Association for the ensuing year. Mr. Shaw joined the Hall Line in 1915. After serving in France during the First World War with the Cheshire Regiment and the Royal Engineers, he returned to the company, being appointed assistant manager in 1940. In 1949 he was appointed a director and general manager and in 1950 managing director. Mr. Shaw is also a director of the Reliance Marine Insurance Co., Ltd.

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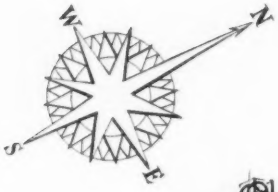

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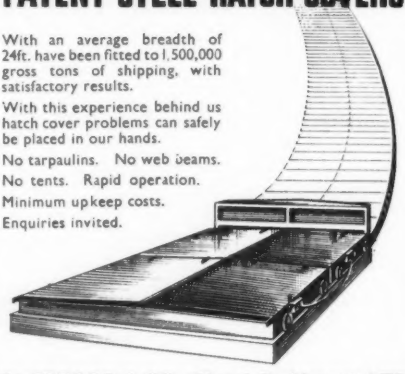

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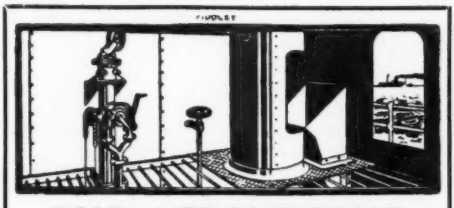

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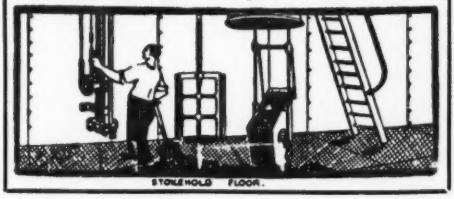

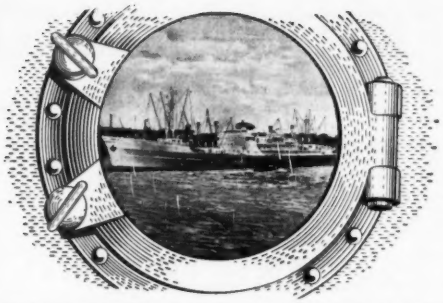

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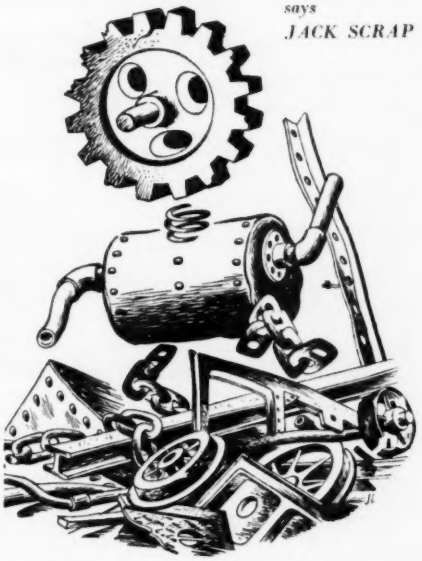

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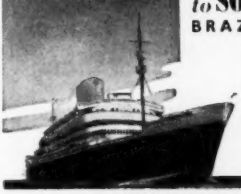

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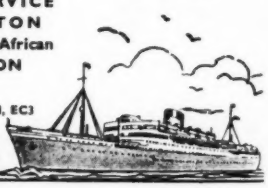

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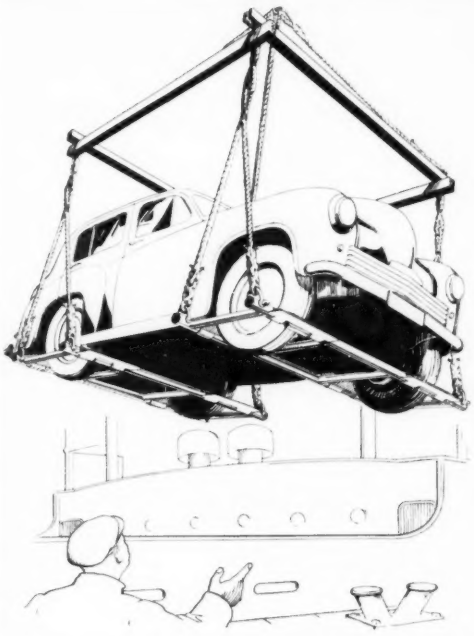

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